**Gleeson Civil Engineering Pty Ltd** (ACN 82 107 630 919)
PO Box 124 CARRINGTON NSW 2292

REMONDIS

# REMEDIATION & CIVILWORKS

# 21D & 21F SCHOOL DR TOMAGO

## Construction Environmental Management Plan (REF: GCE-CEMP-1074)

**This plan has been reviewed and approved by:**

| ISSUE/ REV | SECTION REVISED | PAGE No's | PREPARED BY | APPROVED BY | DATE |
|---|---|---|---|---|---|
| A1 | Initial Issue | All | FB | TG | 09/11/21 |
| A2 | Various revisions following DoP review | All | FB | TG | 02/12/21 |
| | | | | | |

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## 1. Introduction

This CEMP details the specific measures, safeguards, controls and protection methods used to ensure the environmental impacts of construction work are minimised.

The primary purpose of the CEMP is to provide a framework reference document detailing how the Construction Contractor will manage and control environmental aspects of the Project during the construction phase.

The CEMP, including the environmental management plans sub-plans and procedures will be applicable to all staff and sub-contractors during the construction phase.

Details of specific measures and procedures including timing, monitoring and responsibility of personnel and reporting requirements are provided in the attached sub-plans (refer attached Appendices).

## 2. Environmental Policy

All staff and contractors will adhere to GCE Environmental Policy (refer Appendix A).

## 3. Description of Project

The Remediation & Civilworks 21D & F School Drive Tomago Project includes but is not limited to the following activities:

- Installation of temporary site fencing and compound
- Installation of environmental controls
- Site clearing
- Remediation of site contamination
- Bulk Earthworks
- Drainage construction
- Pavement construction
- Kerb construction
- Revegetation

# 4. Stakeholders

The following stakeholders are relevant to this project:

- **Remondis** – Scott Smith 02 4921 7635
- **Tomago Aluminium** – 02 4966 9669
- **Varley Group** – 02 4964 0400
- **Port Stephens Council** – 02 4988 0255
- **Department of Planning** - Deana Burn 02 9274 6453
- **JME Environments** – James McMahon 0427 893 668
- **GHD** – Ian Gregson 02 4979 9904

## 5. Relevant Documents

The following documents are relevant to this project:

- Appendix O – Approved Development Plans - Stormwater & Drainage Plans (C1.1 Rev A, C1.3 Rev B, C2.1 Rev B, C2.2 Rev A, C2.3 Rev A, C2.4 Rev A, C3.1 Rev B, C3.2 Rev B, C3.3 Rev B, C5.1 Rev A)

- Appendix P - Remedial Action Plan JME20005-3 (Revision July 2021) - 21D and 21F School Drive Tomago

## 6. Relevant Legislation

The following legislation is relevant to the project:

- **Contaminated Land Management Act 2008:** Where contaminated land is discovered there is a duty to notify NSW Environmental Protection Authority (EPA).
- **Heritage Act 1977:** No heritage items are anticipated at the Site; however, if relics are discovered during construction an excavation permit may be required from the Heritage Office under Section 139 of the Act.
- **National Parks and Wildlife Act 1974:** No Aboriginal sites or artefacts are anticipated at the Site, however if any artefacts or sites are found during construction a permit to destroy, remove or deface may be required from The Office of Environment and Heritage (OEH) under Section 90 of the Act.
- **Protection of the Environment Operations Act 1997 (NSW):** Section 120 of the Act prohibits Pollution of Waters and Part 5.7 requires reporting of notifiable pollution incidents and environmental harm.
- **Waste Avoidance and Resource Recovery Act 2001:** This Act promotes the waste hierarchy to be adopted (avoidance, resource recovery and disposal).

## 7. Impacts

Listed below are the environmental aspects and potential environmental impacts that will require management during the construction stage of the project. These impacts and objectives are addressed in the Sub-plans in the attached Appendices of this CEMP.

**Land:**

- Erosion and sedimentation from areas of exposed soil and stockpiles, especially resulting from rainfall and wind action.
- Spills/leaks of fuels, oils and chemicals.
- Access and parking requirements
- Potential contamination from adjacent land
- Management of 'Unexpected Finds'

**Traffic and Access:**

- Interaction with members of public
- Construction vehicle parking requirements
- Inconvenience and disruption for members of public using
- Pedestrian access into unauthorised areas

**Noise and Vibration:**

- Impact on local stakeholders (local residents)
- Works to be completed within the approved work hours

**Soils and Geology:**

- Use of onsite materials in accordance with waste classification (National Environmental Protection Council's National Environmental Protection (Assessment of Site Contamination) Measure 1999 Amendment 2013)
- Management of potential contaminated materials in accordance with classification

- Storage of oils, fuels, chemicals
- Sediment Control Measures
- Stormwater Management
- Management of 'Unexpected Finds'

**Air:**

- Dust generation due to exposed surfaces, vehicle movements and stockpiles.
- Exhaust fumes from construction vehicles.

**Heritage:**

- Potential for discovery of unforeseen heritage items, Aboriginal or other.

**Water:**

- Sedimentation impacts arising from excavations.
- Erosion and sedimentation impacts from areas of exposed soil, stockpiles particularly in the event of rainfall.
- Spills and leaks of fuels, oils and other chemicals.

**Flora & Fauna:**

- Loss of trees and vegetation necessary to undertake works
- Site runoff impacting upon local environment

**Social/Community:**

- Temporary loss of local amenity due to construction site establishment and equipment noise.
- Minor disruption to local traffic due to construction activities.
- Access to existing facilities during construction

**Waste:**

- Waste Classification & Disposal. Options for disposal of green waste, ENM, general waste, road gravels, and concrete to be managed, however generally if required:
- Concrete/Asphalt – Recycling facility (Kooragang Island)
- General Waste – Summerhill Waste Management Facility or other licenced facility
- Contaminated Waste – testing and classification to determine disposal location (Refer to Remedial Action Plan JME20005-3)

## 8. Site Induction and Specialist Training

A site induction for all construction and management personnel involved with the project will be carried out prior to the commencement of the works. All key issues outlined in this document will be covered within the site induction. These include:

- Erosion and sediment control requirements
- Flora protection and management
- Fauna protection and management
- Waste management requirements
- Site Contamination
- Stormwater management requirements

- Air/odour/dust management requirements
- Noise control requirements
- Operating hours
- Social issues (neighbours, amenity etc.)
- Procedures for unexpected heritage discovery
- Incident and pollution reporting procedures
- Unexpected Finds

All site personnel will be required to sign off to indicate completion of the induction and acceptance of their environmental responsibilities.

## 9. Inspection and Monitoring

Monitoring will include records of all site inductions, inducted personnel and any environmental/pollution incidents and non-conformances (see Section 10 below).

The Project Manager will ensure that the requirements detailed in the Action Checklist of this CEMP are implemented at the required times to ensure compliance with statutory and CEMP obligations.

The Inspection, Monitoring and Testing Report Form will be completed by the Construction Site Supervisor on a weekly basis, to ensure all the requirements of the CEMP and sub-plans are implemented.

The Construction Site Supervisor will be responsible for performing a visual inspection of the silt fences and other controls as applicable to ensure it is functioning properly and minimising turbid water flow from the site.

## 10. Non-Conformance and Corrective Action

All environmental incidents and non-conformances will be recorded on a Non-Conformance Report.

A Non-Conformance Register (shown in Appendix M) will be maintained to monitor the status of any non-conformances raised and list corrective actions taken. Corrective actions may include:

- Cessation of the activity
- Source of the complaint is to be remedied as soon as possible
- Completion of an incident/non-conformance report submitted to the Project Manager

All non-conformances will be corrected as soon as possible and strategies implemented to reduce the likelihood of incidents occurring again.

The Construction Site Supervisor will be responsible for reporting all safety and environmental non-conformances to the Project Manager.

## 11. Roles and Responsibilities

**Contractor Management**

The Contractor's management personnel will lead environmental management by example, through provision of suitable resources to implement and monitor environmental measures, identification of non-conforming conditions or behaviours, and active promotion of environmental awareness and individual environmental responsibility.

**Project Manager**

The Project Manager will be responsible for ensuring compliance with the CEMP and all sub-plans and any permits or approvals and reviewing environmental management procedures and will also be responsible for reviewing the management measures in consultation with government agency representatives, if required. The Project Manager will also receive and respond to any complaints.

**Site Supervisor**

The Site Supervisor will be responsible for implementing the controls set out in the Appendices of this CEMP and will also be responsible for checking the work site on a regular basis and ensuring that regular maintenance is undertaken to minimise environmental impacts.

The Site Supervisor is to ensure that all personnel are provided with appropriate environmental "toolbox" training and will be jointly responsible for reviewing the CEMP and recommending updates as required.

**Other construction personnel and contractors**

All construction personnel and contractors have a general environmental obligation. Construction personnel must meet CEMP and sub-plan requirements, work in approved areas and minimise the impacts of the activity wherever possible.

## 12. Environmental Complaints Management and Incident Response, Investigation and Reporting

All incidents will be recorded on a Non-Conformance Report. A Complaints Register (shown in Appendix N) will be maintained to monitor the status of any complaints raised and list corrective actions taken. Any complaints/incidents related to the works will be forwarded to client.

Under Part5.7 of the POEO Act1997, incidents that have a material harm to the environment (caused or threatened) are to be reported immediately to EPA.

An emergency contacts list is provided below.

| Contact/Issue | Organisation | Name | Phone |
|---|---|---|---|
| Client Project Manager | AvidPM | David Read | 0420 735 126 |
| GCE Project Manager | GCE | Frank Butler | 4961 5500<br>0419 752 283 |
| GCE Site Supervisor | GCE | Matt Bow | 0447 615 955 |
| Care for wildlife if injured fauna are found | WIRES | | 1300 094 737 |
| Environmental Incident Report | EPA | | 131 555 |
| | | | |

## 13. Communication

Prior to commencing works, the Client and other stakeholders (CCC) will be informed of the works and the

proposed timing. They will also be supplied with the name and contact number of GCE's Project Manager to whom they can raise concerns regarding environmental issues during construction works.

GCE's Project Manager or a nominated representative will be responsible for all communications and shall maintain up-to-date records of all communications.

Pre-start briefings will be conducted each morning and toolbox talks delivered on key aspects of the project, as required.

New personnel on site are to be inducted to explain the critical aspects of the site and nature of the works.

## 14. Review of CEMP

This CEMP shall be reviewed as required by GCE's Project Manager and any changes to documented procedures recorded.

## 15. References

DECCW (2009) *Waste Classification Guidelines*
DECCW (2009) *Interim Construction Noise Guideline*
Landcom (2004) *Soils and Construction Guidelines "The Blue Book"*
NPWS. *Checklist for Bush Regeneration Activities in the Habitat of Threatened Species, Endangered Populations and Endangered Ecological Communities*

## Appendix A: Gleeson Civil Engineering – Environmental Policy

# Environmental Policy

We recognise that the business of Civil Engineering Construction is amongst those industries having a significant impact on the environment. To ensure that all such impacts are minimised, we have decided to implement an Environmental Management System for our company. This reflects the high priority, which we give to ensuring that we are an environmentally responsible corporate citizen.

As a sign of its commitment, the company has implemented an Integrated Management System (IMS) that complies with a number of industry prequalification schemes and standards.

The IMS satisfies the requirements of ISO 9001 (Quality Management), ISO 14001 (Environmental Management) and AS/NZS 4801 (Health and Safety Management) as they relate to the minimum requirements set down by most entities within the civil construction industry, business needs and client or project requirements.

Whilst the final product of our work is dictated by the requirements of our clients we will continually press for the use of environmentally friendly component products and recycled materials as alternatives wherever possible.

In the construction phase our primary environmental goal is in the prevention of pollution, as this is the aspect over which we exercise most control, particularly in relation to water, air, noise and traffic pollution.

In documenting our environmental policy we commit our organisation to the following goals:

- Establishment of a culture of continual improvement and prevention of pollution;
- Compliance with environmental legislation and our clients requirements
- Establishment of a framework with the Integrated Management System for setting and reviewing our environmental performance, objectives and targets;
- The education and training of our employees and subcontractors in the requirements of the Integrated Management System;
- Provision of emergency response mechanisms;
- To promote the use of suppliers and sub-contractors who have an Environmental Management System.
- To promote the conservation of natural resources

We are conscious that Environmental Management is best handled with the co-operation of all citizens and as such we will display this statement as a public document.

Our policies are reviewed and updated annually to react to client and stakeholder needs and ensure that Gleeson Civil evolve with the industry around us.



Tim Gleeson
Managing Director
3rd February 2021

## Appendix B: Erosion and Sediment Control Plan (ESCP)

Suite 4
257-259 Central Coast Highway
Erina NSW 2251
02 4365 1668
centralcoast@northrop.com.au
ABN 81 094 433 100

NL201175

17 May 2021

Mark Jackson
Jackson Environment and Planning Pty Ltd
Suite 102, Level 1, 25-29 Berry St
North Sydney NSW 2060

Dear Mark,

**Re: Tomago Resource Recovery Facility and Truck Parking Depot – 21D and 21F School Drive Tomago**
Soil and Water Management Plan – Addendum

## Background

Northrop Consulting Engineers have been engaged by Jackson Environment and Planning Pty Ltd to prepare a concept Soil and Water Management Plan (Revision E, dated 12.11.20), to support the redevelopment of a resource recovery facility and truck parking depot located at 21D (Lot 11 DP270328) and 21F (lot 8 DP 270328) School Drive, Tomago.

Following the submission of the Environmental Impact Statement (EIS) prepared by Jackson Environment and Planning, a number of additional comments were raised by the various agencies tasked with reviewing and approving the proposed Soil and Water Management Plan as part of the EIS.

This addendum letter is intended to address each of the comments raised by each individual agency in relation to the Soil and Water Management Plan. The information presented within this document is to supersede that of the relevant sections in the of the Soil and Water Management Plan (Revision E).

### Department of Planning, Industry and Environment (DPIE) – Biodiversity and Conservation Division (BCD)

**Comment 1**

> *"It is proposed to store and process hazardous materials on flood prone land. The EIS and the proposed Emergency Plan have not assessed the risk of flood waters transporting hazardous materials and contaminating nearby communities, and natural areas. While the EIS notes that all hazardous substances will be stored in a bunded area is not clear if the bund is designed to protect against all floods, up to and including the probable maximum flood (PMF). The EIS does not state if trucks, containing hazardous materials, will park in the uncovered overnight parking area and if so, how these risks would be managed.*
>
> *BCD recommends that all hazardous materials stored on site are protected from all floods up to and including the PMF. Also, the Emergency Plan should be updated to include safeguards to prevent the release of hazardous materials from the sites during a large flood event."*

The Probable Maximum Flood (PMF) level identified for the site is at RL6.30m AHD. It is noted that this level is approximately 700mm above the floor level of the existing buildings.

The revised Emergency Management Plan prepared by Jackson Environment and Planning (JEP) provides additional details for the handling and storage of hazardous materials to provide protection during a flood event.

In summary, the plan outlines that all hazardous materials will be stored in locations with bunding provided up to the PMF level of RL6.30m, or otherwise on raised platforms above the flood level.

In addition, the management plan specifies that no hazardous materials are to be stored within trucks parked within the uncovered depot.

**Comment 2**

> *"It is proposed to use the existing proprietary water treatment devices; Humeceptor STC-5 and the Hume Jellyfish HF-1800. These devices have been designed to treat the pollution from a wire and cable manufacturing facility. The new use of the site as a resource recovery facility may change the pollutant loads and the existing stormwater treatment devices may not continue to be appropriate.*
>
> *BCD recommends that the proponent reviews the continued use of existing stormwater treatment devices to ensure they remain appropriate under the proposed change in land use to use in a recycling facility."*

The handling and processing of waste materials are to be performed entirely within the enclosed buildings as outlined in the Waste Management Plan prepared by JEP. Pollutants or hazardous materials will be unable to enter the stormwater system and as such, it is anticipated that there will be no significant change in pollution generation as part of the change of use.

The treatment devices provided as part of the previous development were suitable for treatment of typical stormwater pollutants generated from industrial developments (i.e. suspended solids, phosphorus, nitrogen and gross pollutants) and thus, it is deemed that these existing devices will remain appropriate for the intended use of the new facility.

**Comment 3**

> *"Runoff from the existing development enters infiltration on-site detention before it is treated with the Humeceptor STC-5 and the Hume Jellyfish HF-1800 devices. This creates a risk that untreated stormwater runoff will be discharged to groundwater through the detention basins. The potential for groundwater contamination and impacts on groundwater dependent ecosystems was assessed for the previous development (GHD 2012). However, this assessment cannot be used for this development as it has different pollution risks.*
>
> *The proponent should consider the potential for groundwater contamination through infiltration of untreated stormwater."*

The Waste Management Plan outlines the storage, handling, and processing of hazardous or pollutant materials, all of which is to occur within the enclosed spaces of the existing buildings. As such, the pollution risk for the site has not changed significantly from that of a typical industrial development.

No additional pollutants, other than that present in typical stormwater runoff is anticipated to enter the ground water via the infiltration systems.

## Hunter Water Corporation (HWC)

**Comment 1**

> *"The Soil and Water Management Plan has stated that the volume of water required from Hunter Water's supply to be used as process water is negligible. The EIS also appears to understate the volume of process wastewater to be generated from the development. The process water system is stated to be a "closed loop" where it is captured and reused until it is lost through evaporation. It is expected that wastewater would be generated through site activities (for example, hosing internal floor areas and washing down trucks).*
>
> *Hunter Water recommends that a more detailed assessment be provided to justify the "closed loop" statement. Expected volumes of process wastewater, and the likely concentrations and types of contaminants contained within it, should be clearly identified and reported."*

The Soil and Water Management Plan previously indicated that a closed loop system was required as part of the material processing. Subsequent investigation into the specifics of the processing indicate that the system does not require water demand and, and that wastewater is generated from the extraction of the drill muds. This wastewater is then exported off-site for treatment and disposal as trade waste as per the updated Waste Management Plan prepared by JEP.

Additional details regarding the expected volumes and concentrations of contaminates as well as the management of the waste material to be exported are provided in the Waste Management Plan. In summary, the facility is expected to process up to 5,000 tonnes per annum.

**Comment 2**

> *"Measures to maintain and monitor the effectiveness of the existing or proposed stormwater controls have not been included within the EIS or Soil and Water Management Plan.*
>
> *Hunter Water recommends that methods to sample and monitor stormwater quality on the site and discharging away from the site be considered and addressed in the Environmental Management Plan."*

The Waste Management Plan prepared by JEP outlines that all waste handling, storage, and processing will occur internally to the existing buildings. As such, no additional pollutants or contaminates generated by the waste are anticipated within the stormwater runoff.

The proposed stormwater controls have been designed to reduce the standard pollutants found within stormwater runoff including suspended solids, total nitrogen, total phosphorus and gross pollutants. Council's DCP requirements and current industry practice is to achieve a percentage reduction in pollutant generated loads.

To monitor the effectiveness of the upstream controls, sampling of the runoff generated by the development would need to be taken at locations prior to treatment and at the discharge outlet at regular intervals. As the proposed development utilises at-source controls including use of infiltration to treat stormwater, no runoff is expected for frequent storm events. As such, monitoring of stormwater quality on a day-to-day basis is not practical.

Monitoring in extreme rainfall events could be undertaken, however in this infrequent event concentrations of pollutants will be minimal due to the volume of runoff generated and therefore the effectiveness of the monitoring would be negated and may not achieve a practical outcome for the intended purpose.

An operation and maintenance plan (to be provided during the detailed design process) will provide a regular schedule to inspect and maintain the stormwater system including treatment devices to ensure they are operating as intended.

Groundwater monitoring as part of the Environmental Management Plan will assess and monitor concentrations of significant pollutants and contaminants of concern.

## Port Stephens Council (PSC)

### Comment 1

> *"The proposed stormwater design does not appear to be supported by any water quantity modelling. A Drains model should be provided to demonstrate the Infiltration system is designed to cater for all 1% AEP post development flows. The natural catchment has high infiltration and it is believed that the subject site won't produce any significant runoff even for the major storm events.*
>
> *Accordingly the Drains model should use the assumption that the pre-development flows, for up to and including 1% AEP event are zero."*

The Soil and Water Management Plan Section 2.1 outlined detailed water quantity modelling undertaken for the existing development and greenfield site (21D and 21F respectively).

The report outlined the assumptions there were made from the initial drains modelling, however the comments provided were considered in addition.

Infiltration rates were obtained from ground water well monitoring which is outlined in Section 10.4.2 of the Groundwater Contamination Assessment Report prepared by JM Environments (JME) dated 28/04/21. The report outlined the measured infiltration rates from the monitoring well to be approximately 266-342mm/hr. For the purposes of this assessment a natural infiltration rate of 300mm/hr was adopted for both sites. It is noted that this was the infiltration rate for the alluvial sands and not representative of the topsoil or fill layers present on the site.

A new ILSAX hydrological model for the site was developed with revised conditions, to better represent the site soil profile. The previous hydrological model assumed a soil type of 1.5 and an antecedent moisture condition of 3. The new hydrological model adopted a soil type of 1.0 and antecedent moisture condition of 1, which is the maximum allowable with the ILSAX model.

Table 1 presents a comparison of the peak flow rates in the pre-developed and post developed scenarios with the revised hydrological assumptions and infiltration rates. Original flows noted below are from Northrop's current Soil and Water management Report.

**Table 1 – Comparison of Peak Flow Rates – 21D School Drive**

| AEP | Original Pre-Developed Peak Flow ($m^3/s$) | Revised Pre-Developed Peak Flow ($m^3/s$) | Post-Developed Peak Flow without OSD ($m^3/s$) | Post-Developed Peak Flow with 300mm/hr Infiltration ($m^3/s$) |
|---|---|---|---|---|
| 1% | 1.37 | 0.043 | 2.07 | 0.524 |
| 2% | 1.07 | 0.0 | 1.81 | 0.396 |
| 5% | 0.746 | 0.0 | 1.47 | 0.213 |
| 10% | 0.489 | 0.0 | 1.18 | 0.105 |
| 0.2EY | 0.223 | 0.0 | 0.942 | 0.049 |

As shown in Table 1, there is a noticeable increase in the post-developed discharge when compared to the pre-developed scenario adopting an infiltration rate of 300mm/hr. This is primarily due to the fact that no runoff leaves the site in a pre-developed state until the 1% AEP event. It is noted that this previously designed and approved stormwater system on 21D was not designed for this criteria.

To achieve the new design criteria being proposed, no runoff in the post developed situation would be allowable, which would require a full redesign of the existing stormwater system on site including reconstructing large areas of pavement.

These changes to Lot 21D are considered unfeasible and excessive considering the change of use and small amount of works being proposed to the site. Furthermore, it is noted that these works do not affect the stormwater runoff volumes or the original design intent for the stormwater system.

It is noted however that the existing system provides considerable benefit in reducing flows from the non-mitigated developed site, thus demonstrating the effectiveness of the existing stormwater detention strategy.

It is also noted, as per our understanding, that no issues have been encountered or identified for the receiving stormwater system downstream of the site or that runoff from the site generated unacceptable impacts to neighbouring or adjoining properties. As the existing site in its current state has been in commission for several years since its completion, this indicates that the existing detention system is achieving the intended design objectives.

For the new development on 21F, on-site detention and infiltration will be provided to limit the post-developed run-off from the additional impervious area. Table 2 provides the comparison of the peak flow rates for the pre-developed and post-developed cases.

**Table 2 – Comparison of Peak Flow Rates (21F School Drive)**

| AEP | Original Pre-Developed Peak Flow ($m^3/s$) | Revised Pre-Developed Peak Flow ($m^3/s$) | Post-Developed Peak Flow with 300mm/hr Infiltration ($m^3/s$) |
|---|---|---|---|
| 1% | 1.45 | 0.044 | 0.044 |
| 2% | 1.15 | 0.0 | 0.0 |
| 5% | 0.824 | 0.0 | 0.0 |
| 10% | 0.586 | 0.0 | 0.0 |
| 0.2EY | 0.327 | 0.0 | 0.0 |

The below ground infiltration system has been modified from the initial design to increase the size to achieve the required detention outcomes. The proposed detention sizing is proposed to be $180m^3$ as presented in the revised engineering plans (refer attached).

**Comment 2**

> *"Council's comments on the SEARs requested a Waste Management Report be provided to demonstrate that the existing on-site sewer management and trade waste systems are appropriate for the proposed development. This report has not been provided. The site is mapped as being very high hazard, indicating the site contains or is located in proximity to sensitive environmental constraints. The EIS notes that the existing system would be sufficient for the new development however, little justification has been given to support this claim.*

*To confirm the adequacy of the existing system, or otherwise, it is recommended that a Waste Management Report, prepared by a suitably qualified person, be provided by the applicant."*

As previously outlined in Section 5 of the Soil and Water Management Plan, the site is currently serviced by an Envirocycle M23 on-site sewer treatment system. The existing system has a treatment capacity of 4.5-5kL/day with a 1L/s peak treatment rate.

The existing system originally provided on-site effluent treatment and disposal for the previous development use, which employed a total of 119 employees. The proposed development will employ a total of 76 employees over several different shifts.

The expected daily inflow rate can be estimated using the usage rates outlined in Table H4 of AS1547-2012 *On-site domestic wastewater management*. For a rural factory including toilets, and kitchen areas, the daily inflow can be calculated by:

Daily inflow = 50L/person/day x 76 persons (total per day)

= 3.8kL/day < 4.5-5kL/day treatment capacity

As such it is anticipated that the existing sewer system will have adequate treatment capacity to manage the sewer demand generated from the use of the site. Treated sewer will be stored in a separate holding tank and periodically taken offsite via a pump-out truck under the current tankering agreement for the site.

In addition, a vehicle washdown bay is proposed to be installed within the heavy vehicle workshop. The vehicle wash bay will be bunded internally within the building with proposed screens to be installed to ensure full water capture. Run-off from the truck wash will be collected by existing floor sumps that will drain the water to a pit in the shed on the northern side of the maintenance workshop. Water will be treated in an oil/water separator and pumped to a 10kL holding tank also located in the shed. The tank will be periodically pumped out, with treated water sent for off-site recycling in accordance with Remondis' existing tankering agreement with Hunter Water. Figure 1 illustrates the indicative bunding and wash bay within the workshop.

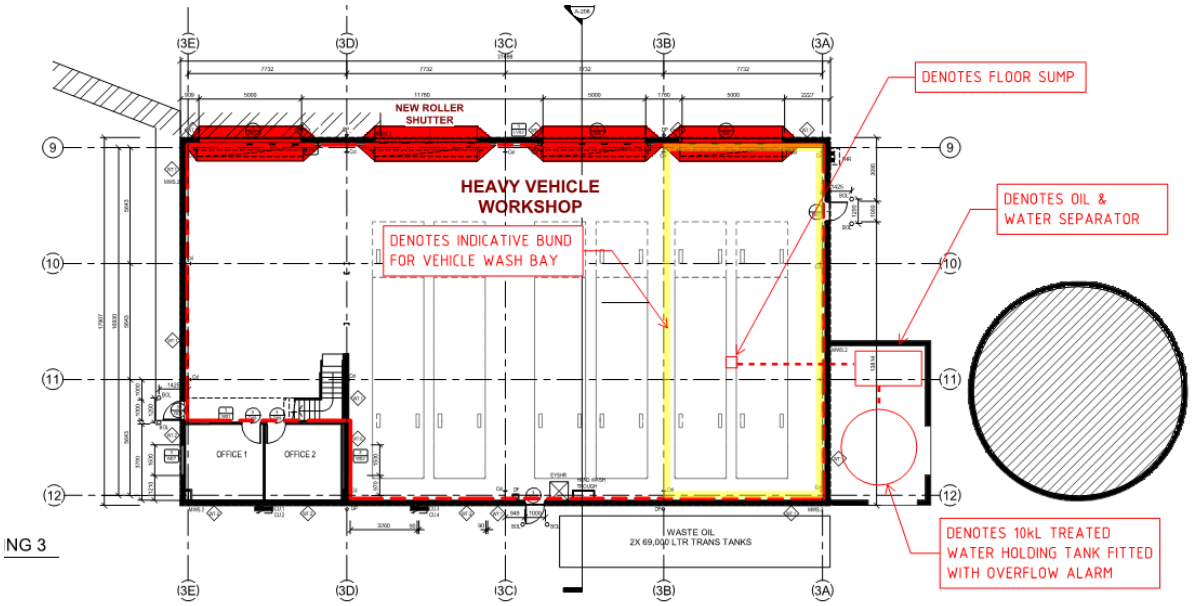



**Figure 1 – Wash Bay located in Proposed Heavy Vehicle Workshop (21D School Drive)**

The wastewater, which may contain small amounts pollutants from the waste material handled by the trucks will be stored and transported off-site as trade waste to be treated and disposed at a licenced facility.

## NSW Environmental Protection Agency (EPA)

**Comment 1**

> *"Consideration of additional and alternative measures for managing water pollution risks associated with construction in contaminated areas. Mitigation measures considered should include but not be limited to:*
>
> - *at-source controls (e.g. removal of highly contaminated material for off-site disposal, bunding, flow diversions);*
> - *options to avoid contaminated stormwater discharges (e.g. full capture and reuse or tankering offsite); and*
> - *additional or alternative treatment measures (e.g. increased sediment basin capacity)."*

As outlined in the previous item regarding on-site detention, the existing soil profile for the site is that of sand, which has very high infiltration rates and low sediment runoff potential. No run-off is expected for the pre-developed site for all storm events up to the 1% AEP event.

As such, the pollution risk of contaminated runoff leaving the site during construction is very low.

Additional bunding will be provided along the site boundary, to ensure in the extremely unlikely occurrence of a 1% AEP storm event (or greater) that runoff will be prevented from leaving the site and will infiltrate into the soil profile, mimicking existing site conditions.

**Comment 2**

> *"Demonstration that the proposed cap over 21F School Drive would be appropriately designed and constructed to prevent percolation of rainwater through the underlying contaminated soils. The Applicant should provide details of the proposed cap, including its:*
>
> - *composition;*
> - *thickness (mm); and*
> - *in situ saturated hydraulic conductivity (m/sec)."*

The Groundwater Contamination Assessment Report prepared by JME concluded that the site does not require additional mitigation to protect groundwater from the presences of arsenic, cadmium, copper and lead. The zinc impacted soils with the highest concentrations are associated with the lead impacted soils that are planned to be removed in accordance with the Remediation Action Plan prepared by JME.

Despite the subsequent findings in the groundwater assessment, a capping has been proposed for the extent of the new parking depot to achieve two primary objectives. The first is to maintain consistency with the outcomes of the Remediation Action Plan, and the second, is to prevent ingress of additional pollutants that may occur from the truck parking depot (for example small oil leaks or spills).

Figure 2 presents the proposed pavement design extracted from the revised engineering plans prepared by Northrop for the parking area, composed of 200mm bound road base material with an impermeable geotextile layer.

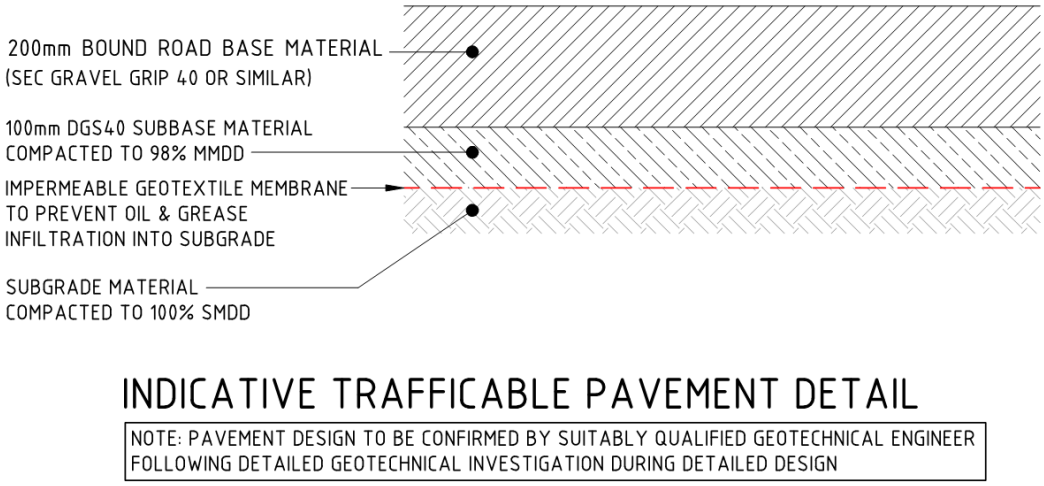



**Figure 2 – Indicative Pavement Detail – Extracted from NL201175 C5.1 Rev B**

The pavement will fall towards stormwater pits where water will be captured, treated, and directed to the infiltration system. The hydraulic conductivity of the road pavement layer is not critical due to the presence for the impermeable geotextile layer. Any surface runoff not captured by the pavement layer will flow as surface runoff and be collected via the stormwater pits installed within the pavement extents. The runoff generated from surface overland flow and the stormwater collected by the subsoil drainage system are directed to the same discharge location after processing through the treatment train.

**Comment 3**

*"A revised water balance to include all water usage requirements, storages, reuse and discharges (including frequency and volumes of any discharges to the infiltration pit and managed overflows from the infiltration pit); and*

*A site drainage plan for the proposed development that identifies:*

- *surface water flow paths for 'clean' roof runoff, 'dirty' stormwater and contaminated runoff from waste processing, stockpiles and external areas;*
- *sub catchments (e.g. roof catchments draining to tanks, waste operations areas draining to collection pits/treatment devices, externals areas draining to each proposed discharge point);*
- *water infrastructure (e.g. bunds, collection pits, pipes, drains, storage tanks);*
- *treatment measures, including the infiltration pit; and*
- *discharge points and flow paths to receiving waterways."*

The site drainage for the proposed truck depot and existing site have been provided as part of the concept engineering (refer attached). The plans identify stormwater infrastructure including treatment measures, infiltration pits, discharge locations and overland flow paths.

As previously identified, all waste handling and processing is to occur entirely within the enclosed space of the existing buildings, and as such additional water infrastructure such as bunds, collection pits, storage tanks, and stockpiles are not required as part of the stormwater system. This infrastructure will be provided within the new facilities of the existing buildings as required for each specific waste operation proposed to be undertaken.

The site will only contain ‘clean’ runoff as there will not be any ‘dirty’ stormwater containing contaminated runoff from waste processing, stockpiles or external waste handling or processing areas.

As there is no ‘dirty’ stormwater and all sewer and process wastewater is to be exported from site no potentially contaminated water will be directed to the infiltration pit.

The infiltration pit is intended to manage the on-site detention to limit the peak flow rates discharging from the site.

As such, there is no practical benefit to providing a revised water balance including water usage requirements, storages, reuse and discharges. The expected water and sewer demands have been previously provided, and expected waste processing and export rates have been provided in the Waste Management Plan.

**Comment 4**

> *“Clarification of whether controlled discharges are proposed for the construction or operation stage of the proposed development; and*
>
> *If controlled discharges are proposed, for each discharge point, the EPA requires a water pollution impact assessment. The level of assessment and consideration of practical and reasonable mitigation measures should be commensurate with the potential water pollution risk/s. This assessment must:*
>
> - *predict the expected frequency and volume of discharges;*
> - *characterise the expected discharge quality under typical and worst-case conditions, in terms of the concentrations of all pollutants of concern present at levels that pose a risk of non-trivial harm to human health or the environment;*
> - *assess the potential impacts of the proposed discharges on the environmental values of the receiving waterways consistent with the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018) for slightly to moderately disturbed ecosystems; and*
> - *demonstrate that all practical and reasonable measures to avoid or minimise water pollution and protect human health and the environment from harm are investigated and implemented.”*

The Waste Management Plan prepared by JEP outlines that that no controlled discharges of waste contaminated water are proposed for the construction or operation of the proposed development. All waste materials will be suitably exported and disposed at an appropriate license facility.

The only discharges proposed to leave the site are that generated by stormwater runoff during storm events. Appropriate measures to minimise the impacts and pollutant risks have been previously addressed in the response to previous comments or otherwise demonstrated in the Soil and Water Management Plan.

**Comment 5**

> *“Additional detailed information on changes to the hydraulic properties of groundwaters as a result of increased point source recharge from the proposed upgrades to the projects stormwater collection system, demonstrating an increase to the protection of receiving groundwaters.”*

The groundwater contour and flow direction has been investigated and is outlined in the Groundwater Contamination Assessment Report prepared by JME. It identifies the groundwater contours flowing in a south, south-east direction towards the river.

The report outlines that previous groundwater monitoring was undertaken during the operation of the sites previous use as well as an assessment of the current groundwater contamination and risks to groundwater from contaminates located onsite within the soils.

The assessment determined that whilst some contamination was identified within the groundwater and soils, the risk of pollutants or contaminates migrating through the groundwater or to receiving groundwaters was negligible. Areas of significant concern, containing high concentrations of zinc and lead are proposed to be removed as part of the Remediation Action Plan.

**Comment 6**

> *"Adequate justification for the differences in water quality treatment devices employed and proposed across Premises."*

There are a number of proprietary stormwater treatment devices available to achieve the desired treatment outcomes for stormwater runoff. The devices vary between manufacturers and the preferred device for a specific site can change depending on the site constraints, desired treatment levels, cost, availability and/or stormwater arrangement.

MUSIC modelling has been undertaken as outlined in Section 2.2.1 and 2.2.2 in the Soil and Water Management Plan that demonstrates the treatment targets have been achieved for both the existing site and the proposed development.

A different device was proposed for the new development as the Humes Jellyfish has since been discontinued and is no longer commercially available. As such an alternative treatment train, utilising pit filter inserts and proprietary filter cartridges has been proposed to provide the most cost-effective solution to achieve the required reduction targets.

We trust that this meets your requirements, however if you have any additional comments or concerns, please feel free to contact the undersigned.

Prepared:



**Robert Suckling**
Civil Engineer
BE Civil (Hons 1), MIE Aust

Reviewed:



**Ben Clark**
Principal | Civil Engineer
BEng (Civil), MIE Aust, CPEng, NER, RPEQ

# TRANSMITTAL

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| Job No: | Job Name: | Pages: |
|---|---|---|
| NL201175 | 21D & 21F School Drive, Tomago | 1 of 1 |

| From | Ben Clark |
|---|---|

| Description | Date | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERNAL CIVIL WORKS | Day | 07 | 28 | 10 | 12 | 17 | | | | | | | | | |
| REMONDIS RESOURCE RECOVERY FACILITY & TRUCK DEPOT | Month | 08 | 08 | 11 | 05 | 05 | | | | | | | | | |
| 21D & 21F SCHOOL DRIVE, TOMAGO | Year | 20 | 20 | 20 | 21 | 21 | | | | | | | | | |

| Doc No. | Document Title | Current Revision | Revision | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C1.1 | COVER SHEET | A | 1 | A | A | | | | | | | | | | | |
| C1.3 | SITE PLAN | B | | A | B | | | | | | | | | | | |
| C2.1 | CONCEPT SEDIMENT & EROSION CONTROL PLAN | B | 1 | A | B | | | | | | | | | | | |
| C2.2 | CONCEPT SEDIMENT & EROSION CONTROL DETAILS | A | 1 | A | A | | | | | | | | | | | |
| C2.3 | CONCEPT BULK EARTHWORKS PLAN | A | | A | A | | | | | | | | | | | |
| C2.4 | CONCEPT LONG SECTIONS | A | | A | A | | | | | | | | | | | |
| C3.1 | CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN – SHEET 1 | B | 1 | A | B | | | | | | | | | | | |
| C3.2 | CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN – SHEET 2 | C | | A | B | | C | | | | | | | | | |
| C3.3 | CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN – SHEET 3 | C | | A | B | C | | | | | | | | | | |
| C5.1 | CONCEPT CIVIL DETAILS – SHEET 1 | B | 1 | A | A | B | | | | | | | | | | |
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# REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT

## LOT 8 & 11 DP270328, 21D & 21F SCHOOL DRIVE TOMAGO
## INTERNAL CIVIL WORKS




LOCALITY PLAN

NORTHROP

DRAWING SCHEDULE

| DWG No. | DRAWING TITLE |
|---|---|
| C1.1 | COVER SHEET |
| C1.3 | SITE PLAN |
| C2.1 | CONCEPT SEDIMENT & EROSION CONTROL PLAN |
| C2.2 | CONCEPT SEDIMENT & EROSION CONTROL DETAILS |
| C2.3 | CONCEPT BULK EARTHWORKS PLAN |
| C2.4 | CONCEPT LONG SECTIONS |
| C3.1 | CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN - SHEET 1 |
| C3.2 | CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN - SHEET 2 |
| C3.3 | CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN - SHEET 3 |
| C5.1 | CONCEPT CIVIL DETAILS - SHEET 1 |

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| REVISION | DESCRIPTION | ISSUED | VER'D | APP'D | DATE |
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| A | DEVELOPMENT APPLICATION | KT | | | 28.08.20 |

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PROJECT: REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT 21D & 21F SCHOOL DRIVE, TOMAGO

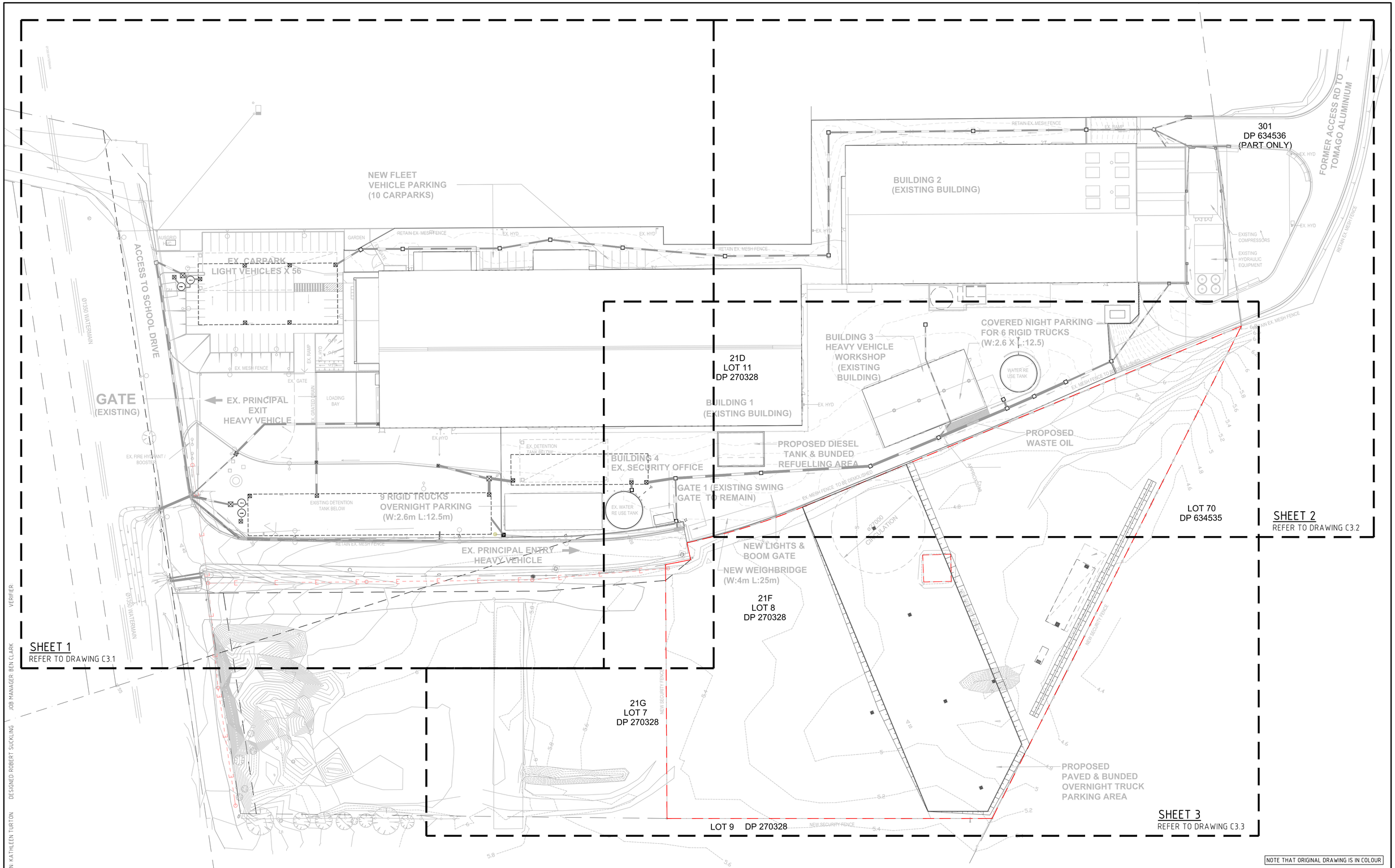
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DRAWING NUMBER: C1.1

REVISION: A

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PROJECT
REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT
21D & 21F SCHOOL DRIVE, TOMAGO

DRAWING TITLE
INTERNAL CIVIL WORKS CONCEPT SITE PLAN

JOB NUMBER NL201175
DRAWING NUMBER C1.3
REVISION B
DRAWING SHEET SIZE = A1

## LEGEND

- DENOTES SITE BOUNDARY LINE
- DENOTES EXISTING TO BE DEMOLISHED
- DENOTES COMBINED SITE/SILT FENCE 'SILTMASTER' OR SIMILAR, INSTALLED IN ACCORDANCE WITH DETAIL SD6-8 OF THE BLUEBOOK.
- DENOTES TEMPORARY CONTRACTORS VEHICULAR ACCESS POINT. CONSTRUCT A STABILISED SITE ACCESS IN ACCORDANCE WITH DETAIL SD6-14 OF THE BLUE BOOK OR PROVIDE A SHAKEDOWN CATTLE GRID AT ENTRANCE POINT TO REDUCE LIKELIHOOD OF SEDIMENT BEING TRAFFICKED OFF-SITE
- DENOTES GEOTEXTILE INLET FILTER INSTALLED IN ACCORDANCE WITH DETAIL SD6-12 OF THE BLUE BOOK
- INDICATES MESH & GRAVEL INLET FILTER INSTALLED IN ACCORDANCE WITH DETAILS SD6-11 OF THE BLUE BOOK
- DENOTES INDICATIVE LOCATION OF STOCKPILE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH DETAIL SD4-1 OF THE BLUE BOOK

## SEDIMENT & EROSION CONTROL NOTES

1. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH RELEVANT ORDINANCES AND REGULATIONS; NOTE IN PARTICULAR THE REQUIREMENTS OF LANDCOMS MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION' (THE 'BLUE BOOK').
2. INSTALL SEDIMENT PROTECTION FILTERS ON ALL NEW AND EXISTING STORMWATER INLET PITS IN ACCORDANCE WITH EITHER THE MESH AND GRAVEL INLET FILTER DETAIL SD6-11 OR THE GEOTEXTILE INLET FILTER DETAIL SD6-12 OF THE 'BLUE BOOK'.
3. ESTABLISH ALL REQUIRED SEDIMENT FENCES IN ACCORDANCE WITH DETAIL SD6-8 OF THE 'BLUE BOOK'.
4. INSTALL SEDIMENT FENCING AROUND INDIVIDUAL BUILDING ZONES/AREAS AS REQUIRED AND AS DIRECTED BY THE SUPERINTENDENT.
5. ALL TRENCHES INCLUDING ALL SERVICE TRENCHES AND SWALE EXCAVATION SHALL BE SIDE-CAST TO THE HIGH SIDE AND CLOSED AT THE END OF EACH DAYS WORK.
6. THE CONTRACTOR SHALL ENSURE THAT ALL VEGETATION (TREE, SHRUB & GROUND COVER) WHICH IS TO BE RETAINED SHALL BE PROTECTED DURING THE DURATION OF CONSTRUCTION. REFER ARCHITECTS PLANS FOR TREES TO BE KEPT.
7. ALL VEGETATION TO BE REMOVED SHALL BE MULCHED ONSITE AND SPREAD/STOCKPILED AS DIRECTED BY THE SUPERINTENDENT.
8. STRIP TOPSOIL IN AREAS DESIGNATED FOR STRIPPING AND STOCKPILE FOR RE-USE AS REQUIRED. ANY SURPLUS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH EPA GUIDELINES.
9. CONSTRUCT AND MAINTAIN ALL MATERIAL STOCKPILES IN ACCORDANCE WITH DETAIL SD4-1 OF THE 'BLUE BOOK' (INCLUDING CUT-OFF SWALES TO THE HIGH SIDE AND SEDIMENT FENCES TO THE LOW SIDE).
10. ENSURE STOCKPILES DO NOT EXCEED 2.0m HIGH. PROVIDE WIND AND RAIN EROSION PROTECTION AS REQUIRED IN ACCORDANCE WITH THE 'BLUE BOOK'.
11. PROVIDE WATER TRUCKS OR SPRINKLER DEVICES DURING CONSTRUCTION AS REQUIRED TO SUPPRESS DUST.
12. ONCE CUT/FILL OPERATIONS HAVE BEEN FINALIZED ALL DISTURBED AREAS THAT ARE NOT BEING WORKED ON SHALL BE RE-VEGETATED AS SOON AS IS PRACTICAL.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING A DETAILED WRITTEN RECORD OF ALL EROSION & SEDIMENT CONTROLS ON-SITE DURING THE CONSTRUCTION PERIOD. THIS RECORD SHALL BE UPDATED ON A DAILY BASIS & SHALL CONTAIN DETAILS ON THE CONDITION OF CONTROLS AND ANY/ ALL MAINTENANCE, CLEANING & BREACHES. THIS RECORD SHALL BE KEPT ON-SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE FOR INSPECTION BY THE PRINCIPAL CERTIFYING AUTHORITY AND THE SUPERINTENDENT DURING NORMAL WORKING HOURS.

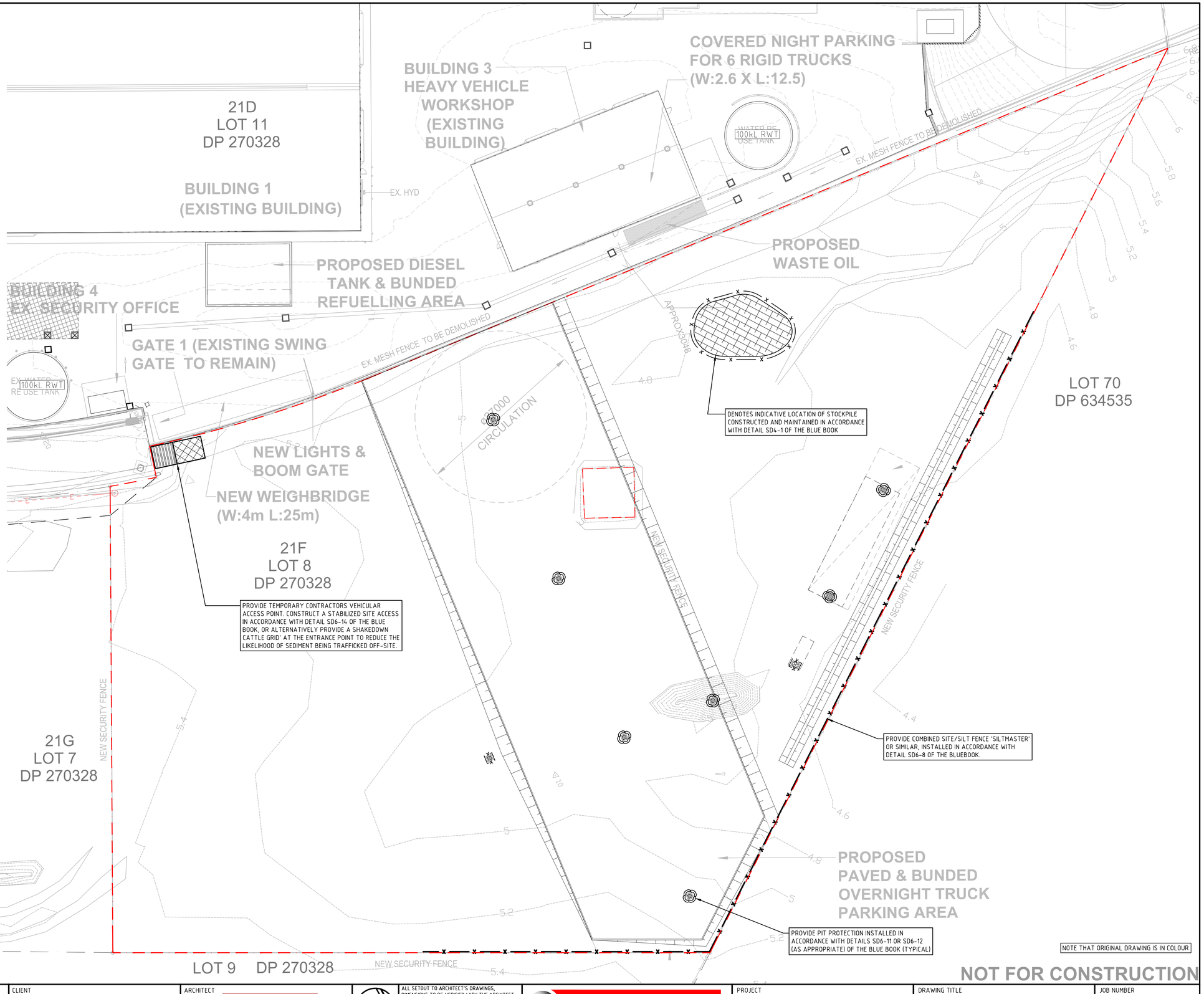
THE CONTRACTOR SHALL ENSURE COUNCIL ASSETS AND THE UTILITIES ARE PROTECTED AT ALL TIMES. ANY AND ALL DAMAGES TO COUNCIL ASSETS AND/OR UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SPECIFICATION OF COUNCIL AND THE UTILITIES AUTHORITY AND AT NO COST TO THE PRINCIPAL OR NORTHROP CONSULTING ENGINEERS.

## SEDIMENT BASIN SIZING CALCULATION

THE SITE IS LOCATED WITHIN THE TEA GARDENS SOIL LANDSCAPE AND PRIMARILY CONSISTS OF SILTY SANDS AND SANDS, WHICH HAS THE FOLLOWING PROPERTIES (IN ACCORDANCE WITH TABLE C13 OF THE 'BLUE BOOK'.

SITE PARAMETERS

| CONSTRAINT | VALUE |
|---|---|
| SEDIMENT TYPE | C |
| SOIL HYDROLOGY GROUP | A |
| K = SOIL ERODIBILITY (K-FACTOR) | 0.016 |
| R = RAINFALL EROSIVITY (R-FACTOR) | 2411 |
| S = 2 YEAR, 6 HOUR STORM INTENSITY | 10.5mm/hr (TOMAGO) |
| LS = SLOPE LENGTH/GRADIENT | 0.19 (80m SLOPE @ 1% GRADE) |
| P = EROSION CONTROL PRACTICE (P-FACTOR) | 1.3 (TYPICAL) |
| C = GROUND COVER (C-FACTOR) | 1.0 (TYPICAL FOR STRIPPED SITES) |
| SOIL LOSS (RUSLE METHOD) (tonnes/ha/yr) | 9.5$m^3$/Ha/Yr |
| EROSION HAZARD (TABLE 4.2 BLUE BOOK) | VERY LOW SOIL CLASS 1 |
| TOTAL SITE RUN-OFF IS LESS THAN 150$m^3$/Yr. BASIN/TANKS NOT REQUIRED. | |




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DESIGNED ROBERT SUCKLING
DRAWN KATHLEEN TURTON
JOB MANAGER BEN CLARK
VERIFIER

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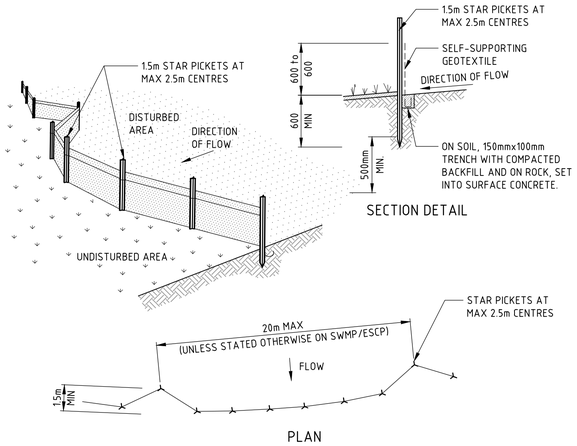
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PROJECT
REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT
21D & 21F SCHOOL DRIVE, TOMAGO

DRAWING TITLE
INTERNAL CIVIL WORKS CONCEPT SEDIMENT & EROSION CONTROL PLAN

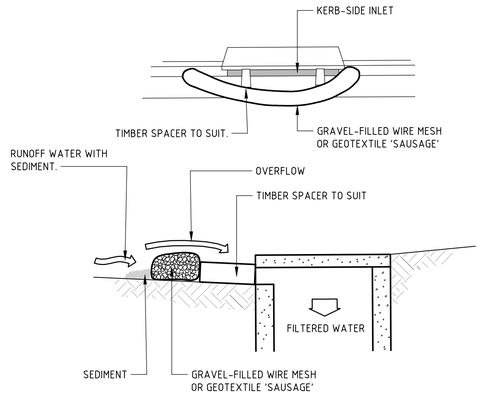
JOB NUMBER NL201175
DRAWING NUMBER C2.1
REVISION B
DRAWING SHEET SIZE = A1




## CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

# SEDIMENT FENCE (SD 6-8)

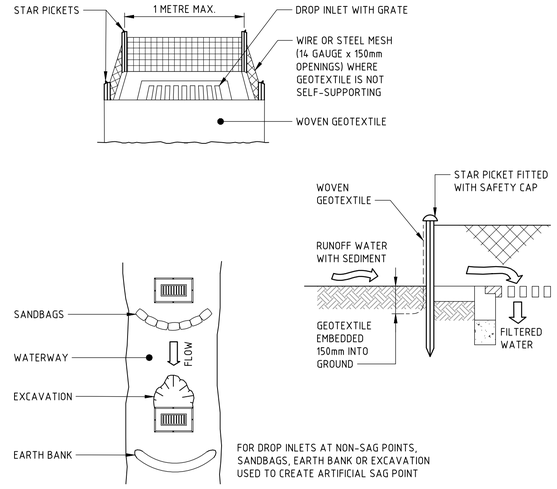



NOTE:THIS PRACTICE ONLY TO BE USED WHERE SPECIFIED IN APPROVED SWMP/ESCP.

## CONSTRUCTION NOTES

1. INSTALL FILTERS TO KERB INLETS ONLY AT SAG POINTS.
2. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
6. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADEN WATERS CANNOT PASS BETWEEN.

# MESH AND GRAVEL INLET FILTER (SD 6-11)

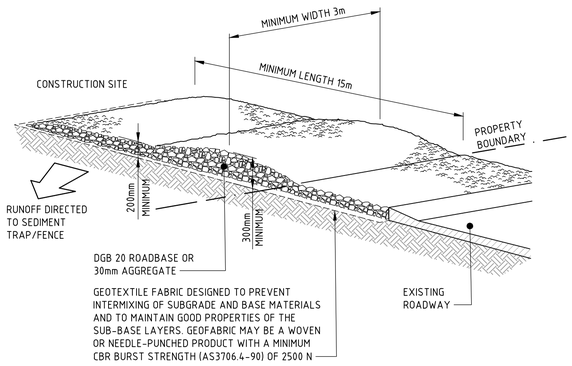



FOR DROP INLETS AT NON-SAG POINTS, SANDBAGS, EARTH BANK OR EXCAVATION USED TO CREATE ARTIFICIAL SAG POINT

## CONSTRUCTION NOTES

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

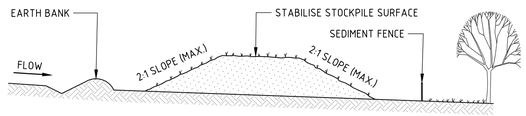
# GEOTEXTILE INLET FILTER (SD 6-12)




## CONSTRUCTION NOTES

1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METRES WIDE.
5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.

# STABILISED SITE ACCESS (SD 6-14)




## CONSTRUCTION NOTES

1. PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2m DOWNSLOPE.

# STOCKPILES (SD 4-1)

DRAWN KATHLEEN TURTON DESIGNED ROBERT SUCKLING JOB MANAGER BEN CLARK VERIFIER

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PROJECT: REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT 21D & 21F SCHOOL DRIVE, TOMAGO

DRAWING TITLE: INTERNAL CIVIL WORKS CONCEPT SEDIMENT & EROSION CONTROL DETAILS

JOB NUMBER: NL201175

DRAWING NUMBER: C2.2

REVISION: A

DRAWING SHEET SIZE = A1

# BULK EARTHWORKS PLAN

## LEGEND

24.8 — DENOTES EXISTING CONTOUR LINES

24.8 — DENOTES BULK EARTHWORKS CONTOUR LINES

4.29 — DENOTES DEPTH OF PROPOSED CUT (-VE) OR FILL (+VE)

## BULK EARTHWORKS NOTES

1. WHERE NOT NOMINATED ON PLAN, BULK EARTHWORKS LEVELS HAVE BEEN DETERMINED BY LOWERING THE FINISHED SURFACE LEVELS BASED ON THE FOLLOWING THICKNESSES AND ALLOWANCES
   - TRAFFICABLE CONCRETE PAVEMENT 300mm
   - LANDSCAPE & MISC. AREAS 150mm
2. THE EXISTING GROUND SURFACE WAS LOWERED BY 150mm UNIFORMLY TO ACCOUNT FOR THE REMOVAL OF VEGETATION, AND TOP SOILS.
   - THIS VOLUME IS ESTIMATED (BASED ON THE DEVELOPMENT AREA OF 3790m²) TO BE APPROXIMATELY 568m³ (TOPSOIL - CUT).
3. BULKING FACTORS OF 1.0 WAS USED FOR BOTH CUT AND FILL MATERIAL.
4. THE APPROXIMATE SITE EARTHWORKS VOLUMES BASED ON THE NOTED PAVEMENT THICKNESSES ARE OUTLINED BELOW:
   - CUT: 321 m³
   - FILL: 553 m³
   - NET: 232m³ (FILL) + 568m³ (TOPSOIL - CUT)
5. THE ABOVE VOLUMES ARE TO BE ASSESS NOTING THE FOLLOWING:
   - NO ALLOWANCE HAS BEEN MADE FOR THE REMOVAL OR OVER EXCAVATION OF UNSUITABLE OR CONTAMINATED MATERIAL.
   - NO ALLOWANCE HAS BEEN MADE FOR DETAILED EXCAVATIONS SUCH AS, SERVICES TRENCHING, SEDIMENT BASIN ETC.
   - NO ALLOWANCE HAS BEEN MADE FOR TEMPORARY CONSTRUCTION PLATFORMS.
6. THIS PLAN HAS BEEN PREPARED FOR INFORMATION PURPOSES ONLY AND IS INDICATIVE IN NATURE. THE EARTHWORKS CONTRACTOR IS TO VERIFY ALL LEVELS AND QUANTITIES AND PERFORM THEIR OWN BULK EARTHWORKS ASSESSMENT.

| Surface Analysis: Elevation Ranges | | | | |
|---|---|---|---|---|
| Number | Color | Minimum Elevation (m) | Maximum Elevation (m) | Volume (m3) |
| 1 | | -2.000 | -1.500 | 7 |
| 2 | | -1.500 | -1.000 | 74 |
| 3 | | -1.000 | -0.500 | 94 |
| 4 | | -0.500 | 0.000 | 146 |
| 5 | | 0.000 | 0.500 | 552 |
| 6 | | 0.500 | 1.000 | 2 |

21D
LOT 11
DP 270328

BUILDING 1
(EXISTING BUILDING)

EX. HYD

BUILDING 3
HEAVY VEHICLE
WORKSHOP
(EXISTING
BUILDING)

COVERED NIGHT PARKING
FOR 6 RIGID TRUCKS
(W:2.6 X L:12.5)

WATER RE
USE TANK

EX. MESH FENCE TO BE DEMOLISHED

PROPOSED
WASTE OIL

PROPOSED DIESEL
TANK & BUNDED
REFUELLING AREA

BUILDING 4
EX. SECURITY OFFICE

GATE 1 (EXISTING SWING
GATE TO REMAIN)

EX. WATER
RE USE TANK

NEW LIGHTS &
BOOM GATE

NEW WEIGHBRIDGE
(W:4m L:25m)

21F
LOT 8
DP 270328

LOT 70
DP 634535

DENOTES TEMPORARY BATTER TO
GEOTECHNICAL ENGINEERS SPECIFICATION
TO ALLOW FOR EXCAVATION

ALIGNMENT 3

ALIGNMENT 2

ALIGNMENT 1

DENOTES 1V:4H PERMANENT
LANDSCAPED BATTER TO EXISTING

21G
LOT 7
DP 270328

NEW SECURITY FENCE

PROPOSED
PAVED & BUNDED
OVERNIGHT TRUCK
PARKING AREA

LOT 9 DP 270328

NEW SECURITY FENCE

VERIFIER:
JOB MANAGER: BEN CLARK
DESIGNED: ROBERT SUCKLING
DRAWN: KATHLEEN TURTON

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PROJECT
REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT 21D & 21F SCHOOL DRIVE, TOMAGO

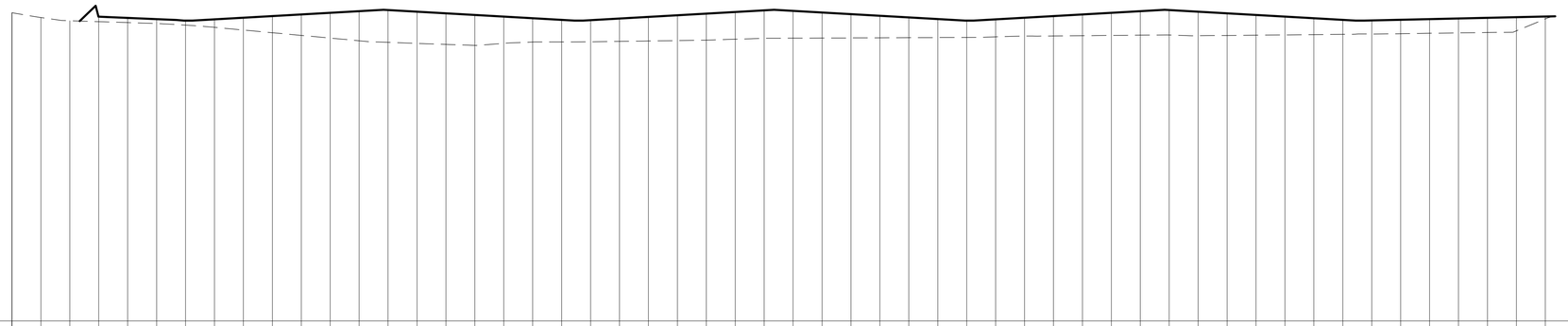
DRAWING TITLE
INTERNAL CIVIL WORKS CONCEPT BULK EARTHWORKS PLAN

JOB NUMBER NL201175

DRAWING NUMBER C2.3

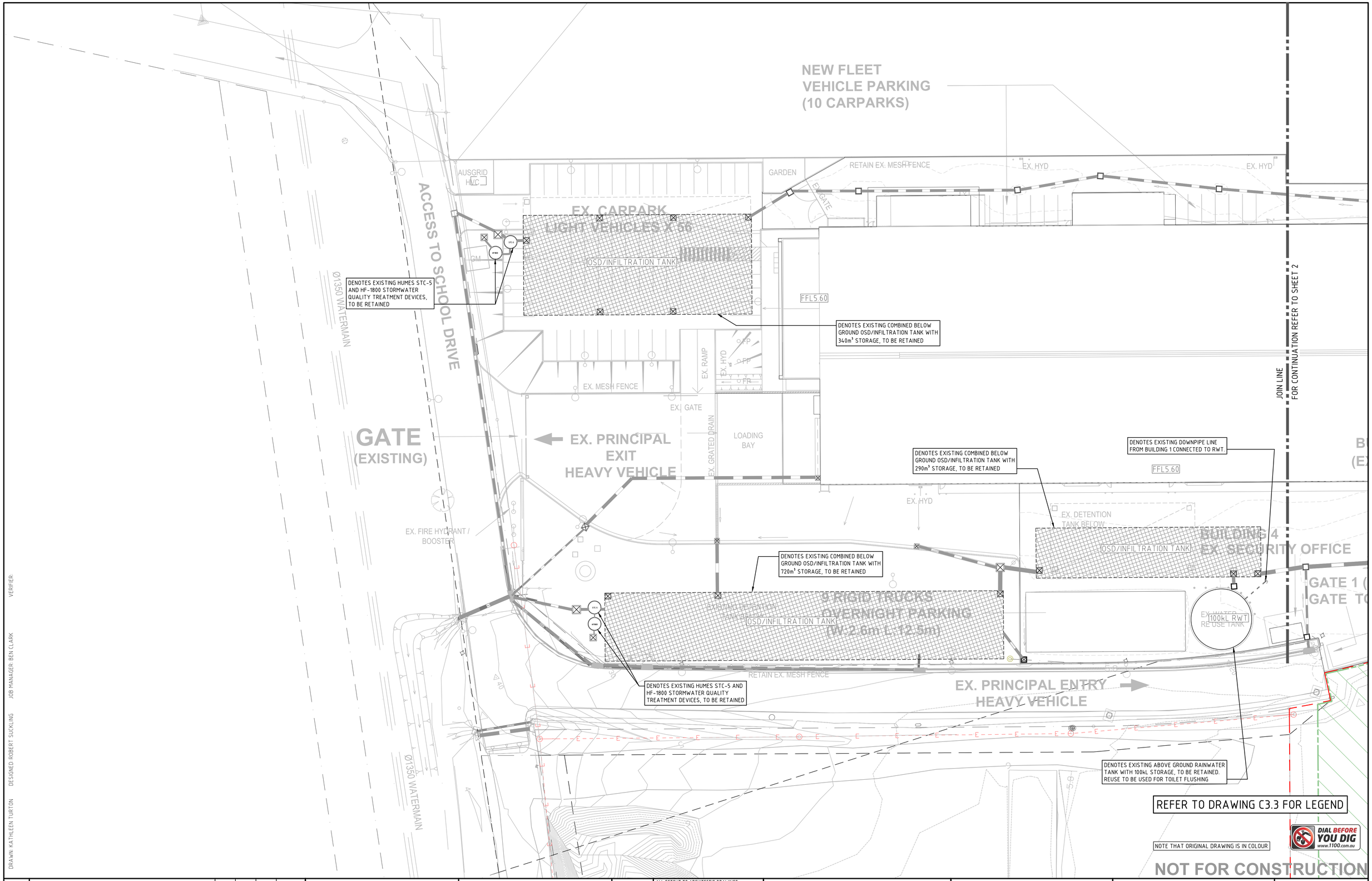
REVISION A

DRAWING SHEET SIZE = A1



VERTICAL 1:40
HORIZONTAL 1:200
Datum 1.000

| | | |




DRAWN: KATHLEEN TURTON DESIGNED: ROBERT SUCKLING JOB MANAGER: BEN CLARK VERIFIER:

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| B | DEVELOPMENT APPLICATION | KT | | | 10.11.20 |
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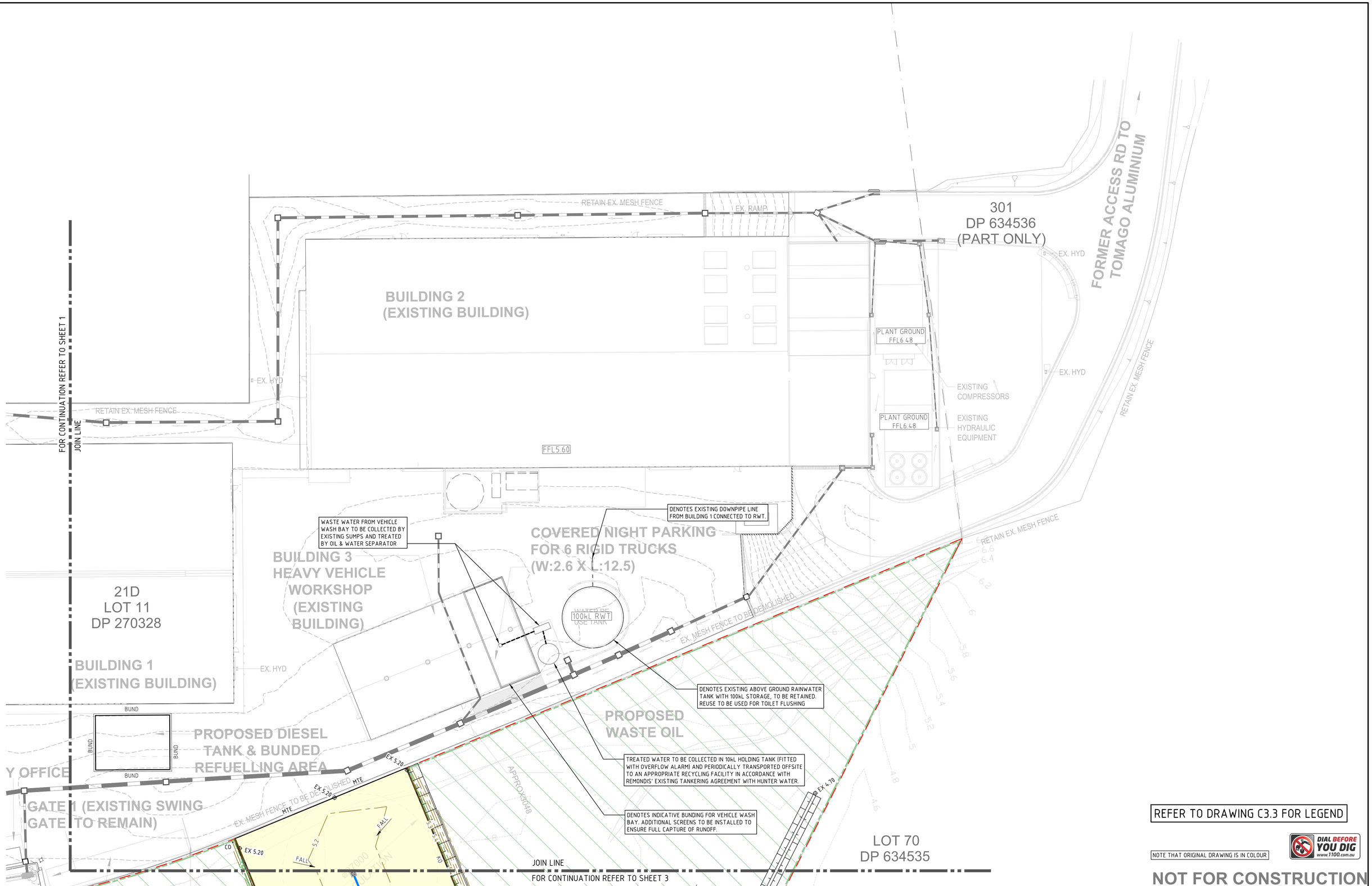
PROJECT
**REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT 21D & 21F SCHOOL DRIVE, TOMAGO**

DRAWING TITLE
**INTERNAL CIVIL WORKS CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN SHEET 1**

JOB NUMBER **NL201175**

DRAWING NUMBER **C3.1** REVISION **B**

DRAWING SHEET SIZE = A1




REFER TO DRAWING C3.3 FOR LEGEND

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PROJECT
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DRAWING TITLE
**INTERNAL CIVIL WORKS CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN SHEET 2**

JOB NUMBER **NL201175**

DRAWING NUMBER **C3.2**

REVISION **C**

DRAWING SHEET SIZE = A1

## LEGEND

- DENOTES SITE BOUNDARY LINE
- DENOTES EXISTING TO BE DEMOLISHED
- DENOTES TRAFFICABLE PAVEMENT, REFER TO DETAIL
- DENOTES EXTENTS OF FUTURE HARDSTAND PAVEMENT (DEVELOPMENT SCENARIO 2)
- BUND — DENOTES PROPOSED BUND AROUND PERIMETER OF DIESEL TANK & REFUELLING AREA
- KO — DENOTES KERB ONLY
- PL 5.30 — DENOTES PROPOSED FINISHED SURFACE LEVEL
- EX 4.60 — DENOTES EXISTING SURFACE LEVEL
- MTE — DENOTES MATCH TO EXISTING LEVELS
- 4.4 — DENOTES EXISTING CONTOURS
- DENOTES APPROXIMATE BATTER EXTENT
- FALL — DIRECTION OF FALL IN FINISHED SURFACE
- DENOTES STORMWATER PIT (NEW / EXISTING)
- # — DENOTES STORMWATER PIT TO BE FITTED WITH 200um OCEAN PROTECT PIT FILTER INSERT WITH HYDROCARBON ABSORBENT PILLOW/OIL SOCK
- OSD — DENOTES BELOW GROUND ON-SITE DETENTION AND INFILTRATION SYSTEM
- Ø225 — DENOTES STORMWATER LINE & SIZE
- DENOTES EXISTING STORMWATER LINE
- SSD — DENOTES Ø100 SUBSOIL DRAINAGE LINE WITH NON-WOVEN GEOTEXTILE FILTER SOCK SURROUND LAID AT MIN 1% LONGITUDINAL GRADE & CONNECTED TO NEAREST STORMWATER PIT
- CO — DENOTES SUBSOIL DRAINAGE CLEAROUT
- DENOTES OVERLAND FLOW PATH
- E — DENOTES APPROXIMATE LOCATION OF EXISTING ELECTRICITY LINE

LOCATIONS OF EXISTING SERVICES ARE APPROXIMATE ONLY & MAY NOT BE COMPLETE. THE BUILDER IS RESPONSIBLE FOR LOCATING EXISTING INFRASTRUCTURE (CULVERTS, PITS, PIPES, SERVICES, INVERT & COVER LEVELS ETC) PRIOR TO COMMENCING CONSTRUCTION.

THE BUILDER SHALL ALLOW TO MODIFY ALL EXISTING SERVICE COVERS TO MATCH THE NEW PAVEMENTS, IN ACCORDANCE WITH THE RELEVANT AUTHORITIES REQUIREMENTS.

PROVIDE TEMPORARY TRAFFIC CONTROL IN ACCORDANCE WITH STATE & FEDERAL STATUTORY REQUIREMENTS AND LOCAL COUNCIL SPECIFICATIONS/REQUIREMENTS

NOTE: EXISTING STORMWATER DRAINAGE, RAINWATER TANKS AND INFILTRATION/DETENTION TANKS FOR 21D LOT11 TO BE RETAINED

NOTE: DRAWINGS TO BE READ IN CONJUNCTION WITH SOIL & WATER MANAGEMENT REPORT

### STORMWATER MANAGEMENT SUMMARY

| | DEVELOPMENT SCENARIO 1 | DEVELOPMENT SCENARIO 2 |
|---|---|---|
| DETENTION VOLUME | 180m³ | 770m³ |
| | 200m² INFILTRATION AREA | 900m² INFILTRATION AREA |
| WATER QUALITY | (x5) PIT FILTER INSERTS | (x20) PIT FILTER INSERTS |
| | (x6) FILTER CARTRIDGES | (x24) FILTER CARTRIDGES |

FOR CONTINUATION REFER TO SHEET 2

JOIN LINE

FOR CONTINUATION REFER TO SHEET 1

JOIN LINE

21D
LOT 11
DP 270328

BUILDING 1
(EXISTING BUILDING)

BUILDING 3
HEAVY VEHICLE
WORKSHOP
(EXISTING
BUILDING)

COVERED NIGHT PARKING
FOR 6 RIGID TRUCKS
(W:2.6 X L:12.5)

DENOTES EXISTING DOWNPIPE LINE FROM BUILDING 1 CONNECTED TO RWT

DENOTES BUND AROUND PERIMETER OF DIESEL TANK

BUND

PROPOSED DIESEL TANK & BUNDED REFUELLING AREA

DENOTES EXISTING DOWNPIPE LINE FROM BUILDING 1 CONNECTED TO RWT

BUILDING 4
EX. SECURITY OFFICE

GATE 1 (EXISTING SWING GATE TO REMAIN)

EX. MESH FENCE TO BE DEMOLISHED

WATER DP
100kL RWT
USE TANK

DENOTES EXISTING ABOVE GROUND RAINWATER TANK WITH 100kL STORAGE, TO BE RETAINED. REUSE TO BE USED FOR TOILET FLUSHING.

PROPOSED WASTE OIL

DENOTES EXISTING ABOVE GROUND RAINWATER TANK WITH 100kL STORAGE, TO BE RETAINED. REUSE TO BE USED FOR TOILET FLUSHING.

PROVIDE SUBSOIL DRAINAGE LINE AROUND STORMWATER PITS WITHIN PAVEMENT. IMPERMEABLE GEOTEXTILE MEMBRANE TO EXTEND BELOW SUBSOIL DRAINAGE LINE (TYPICAL). REFER TO DETAIL

DENOTES 1V:4H BATTER IN EXISTING

EXISTING CONCRETE SLAB TO BE DEMOLISHED & DISPOSED OFF SITE

#PIT
CL5.15
IL4.50

NEW LIGHTS & BOOM GATE

NEW WEIGHBRIDGE
(W:4m L:25m)

21F
LOT 8
DP 270328

DENOTES 1V:4H BATTER IN EXISTING

#PIT
CL5.15
IL4.21

LOCALLY GRADE SURROUNDING LANDSCAPE TO FALL TOWARDS STORMWATER PIT. STORMWATER LINE TO BYPASS TREATMENT DEVICE

PIT
CL4.95
IL3.47

#PIT
CL5.15
IL3.92

#PIT
CL5.15
IL4.50

21G
LOT 7
DP 270328

NEW SECURITY FENCE

LOT 70
DP 634535

DENOTES LEVEL SPREADER MOUND 500mm WIDE TO DISPERSE OVERFLOW AS SHEET FLOW TO MIMIC NATURAL FLOW REGIME ON SITE

DENOTES BELOW GROUND COMBINED OSD (180m³ STORAGE) AND INFILTRATION SYSTEM (200m²AREA).

IL3.17

IL3.48

IL3.37

DENOTES (x6) 460PSORB OCEAN PROTECT FILTER CARTRIDGES IN PRECAST PROPRIETARY HOUSING

EXISTING MATERIAL STOCKPILE TO BE RELOCATED ON SITE

#PIT
CL5.30
IL3.75
NOTE: INSTALL SHUT-OFF VALVE IN PIT TO OUTLET IN THE EVENT OF SPILLAGE OCCURRING. INSTALL LOW-FLOW DIVERSION WEIR

PROPOSED PAVED & BUNDED OVERNIGHT TRUCK PARKING AREA

LOT 9 DP 270328

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VERIFIED:
JOB MANAGER BEN CLARK
DESIGNED ROBERT SUCKLING
DRAWN KATHLEEN TURTON

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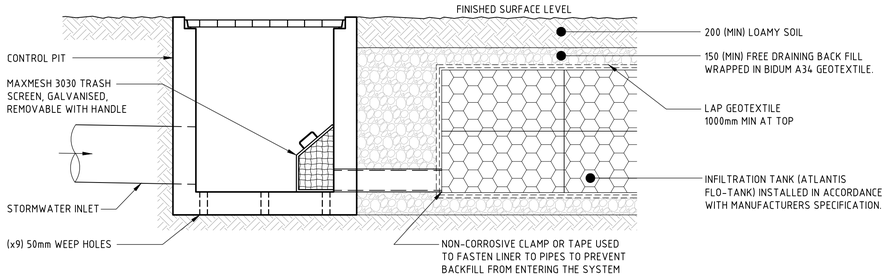
DRAWING TITLE: INTERNAL CIVIL WORKS CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN SHEET 3

JOB NUMBER: NL201175

DRAWING NUMBER: C3.3

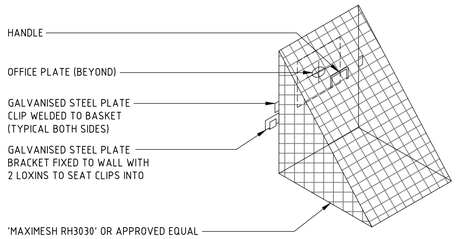
REVISION: C

DRAWING SHEET SIZE = A1

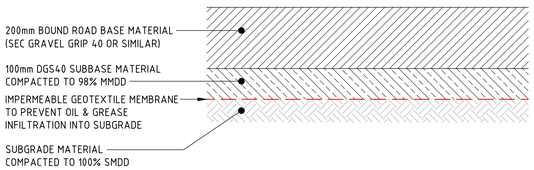



## TYPICAL SECTION OSD / INFILTRATION SYSTEM

NOTE: INFILTRATION RATE OF 300mm/hr ADOPTED BASED ON TESTING UNDERTAKEN BY JM ENVIRONMENT AND OUTLINED IN GROUNDWATER CONTAMINATION ASSESSMENT REPORT No.JME20005-5 DATED 28.04.21.

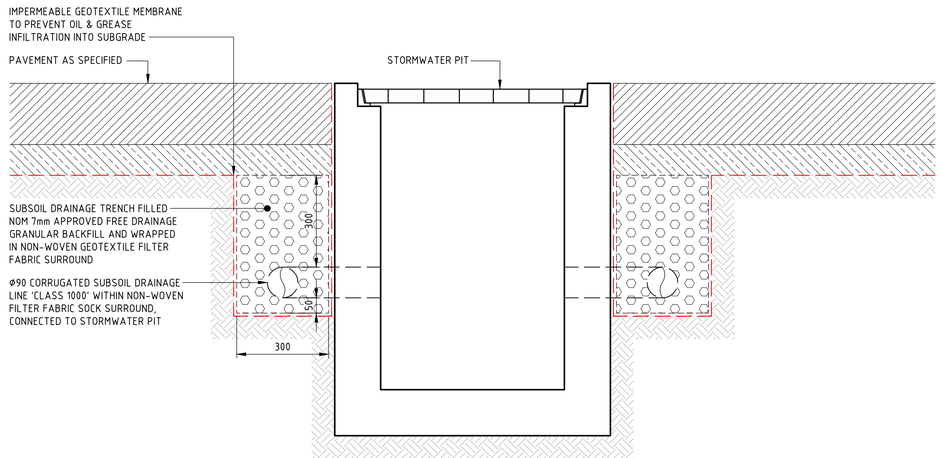



## TRASH SCREEN DETAIL




## INDICATIVE TRAFFICABLE PAVEMENT DETAIL

NOTE: PAVEMENT DESIGN TO BE CONFIRMED BY SUITABLY QUALIFIED GEOTECHNICAL ENGINEER FOLLOWING DETAILED GEOTECHNICAL INVESTIGATION DURING DETAILED DESIGN




## PAVEMENT SUBSOIL DETAIL AT STORMWATER PITS

NOTE THAT ORIGINAL DRAWING IS IN COLOUR

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DRAWN: KATHLEEN TURTON
DESIGNED: ROBERT SUCKLING
JOB MANAGER: BEN CLARK
VERIFIER:

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PROJECT
**REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT 21D & 21F SCHOOL DRIVE, TOMAGO**

DRAWING TITLE
**INTERNAL CIVIL WORKS CONCEPT CIVIL DETAILS SHEET 1**

JOB NUMBER **NL201175**
DRAWING NUMBER **C5.1**
REVISION **B**
DRAWING SHEET SIZE = A1

## Appendix C: Site Access and Public Safety Sub-plan

### Potential Impacts:

- Potential impacts to public safety through unauthorised access
- Potential disruptions to local traffic

### Objective/Performance target:

- Manage delivery and storage of site materials to minimise impacts on road users and local residents (traffic)
- No unauthorised accesses during construction
- No traffic accidents (pedestrian or vehicle/plant) reported as a result of construction activities
- No damage to existing utilities

### Performance indicator:

- Number of community complaints relating to traffic impacts
- Number of traffic accidents or near misses as a result of project activities

| Action | Stage of construction | Frequency | Responsibility |
|---|---|---|---|
| Install barricading fencing and construction signage around worksite. | Pre-Construction and As Required | Check daily | Construction Site Supervisor |
| Inspect controls daily and repair/modify. | Pre-Construction and As Required | Check daily | Construction Site Supervisor |
| Undertake Dial-Before –You Dig. Identify, locate and protect all buried utilities on site prior to commencing works and consider impacts of daily works on utilities. | Pre-Construction | Check Daily for potential impacts | Construction Site Supervisor |
| Utilise spotters and reversing alarms to prevent accidents during truck manoeuvres. | Project duration | All truck movements | Construction Site Supervisor |

**Specific equipment or resources**: Temporary safety fencing, temporary construction signs, traffic bollards cones, nightline, traffic controller(s)

**Monitoring and Reporting:** Construction Site Supervisor

**Corrective Action:** Repair and replace fences and signs if damage or theft occurs

## Appendix D: Soil and Water Management Sub-plan

### Impacts:

- Potential for increased erosion/sedimentation from exposed excavations and stockpiles.
- Potential for turbid waters to pollute waterways.
- Potential for fuel/chemical leaks from vehicles, plant and equipment to contaminate land or water.

### Objective/Performance target:

- Minimal offsite soil erosion/sedimentation or pollution as a result of construction activities.
- Minimal turbid water flow leaving the site.
- Maintain sediment containment measures following rainfall events and complete site checklists to record maintenance requirements.
- No spills or leaks from vehicles, plant and equipment.
- Site accesses by vehicles and plant to be limited to avoid continued soil disturbance.
- All works to be carried out in accordance with the Soils and Construction Guidelines "Blue Book" and approved Erosion and Sediment Control Plans.

### Performance indicator:

- Visual evidence of erosion/sedimentation/increased turbidity or pollution impacts during normal operation or following rainfall events.
- Number of externally and internally reportable environmental incidents relating to adverse soil and water impacts.
- Actual response time to rectify breaches in soil and water management.

| Action | Stage of construction | Frequency | Responsibility |
|---|---|---|---|
| Install erosion and sediment controls as per Erosion and Sediment Control Plan (ESCP) and maintained during course of works. | Pre-construction & Construction | Check daily | Construction Site Supervisor |
| Chemical or fuel spills must be contained immediately. Client should be immediately notified and the contaminated material shall be cleaned-up and disposed of appropriately. | Construction | As Required | Construction Site Supervisor |

| Action | Stage of construction | Frequency | Responsibility |
|---|---|---|---|
| Spill kits to be kept on site in case any fuel is spilt during plant refuelling operations. | Construction | During refuelling | Construction Site Supervisor |
| If contaminated land is discovered all works will cease and the client will be notified. Assessment to be completed on material. | Construction | As required | Construction Site Supervisor |
| All generated construction materials excess or not suitable for incorporation into the works should be removed for safe disposal or recycling. | Construction | As required | Construction Site Supervisor |
| Strategic placement of temporary construction and waste material stockpiles at least 2m away from roads, and away from concentrated flows. | Construction | Check daily | Construction Site Supervisor |
| Runoff should be prevented from washing through stockpiles by diverting runoff around stockpile areas. | Construction | Check daily | Construction Site Supervisor |

**Specific Equipment or Resources**: Spill Kit, Geotextile fabric and pins, timber stakes, plastic sheeting, silt curtain, spill kits.

**Monitoring and Reporting:** Construction Site Supervisor, Project Manager

**Corrective Action:** Repair and replace silt fences if damage occurs.

## Appendix E: Vegetation Management Sub-plan

**Potential Impacts:**

- Loss of trees to allow progression of works
-

**Objective/Performance target**

- Minimal loss of established vegetation arising from works
-

**Performance indicator:**

- Number of externally and internally reportable environmental incidents relating to adverse flora impacts
- Visual evidence of vegetation establishment during post-construction surveys
- Impact upon Flora and Fauna

| Action | Stage of construction | Frequency | Responsibility |
|---|---|---|---|
| Removal of trees to be minimised | Pre & Post-construction | Ongoing | Project Manager & Construction Site Supervisor |
| Removal of additional trees during construction will require approval prior to their removal | Prior to Removal | As required | Contractor's Project Manager |
| Care should be taken that any noxious weeds occurring on the site are not further dispersed as a result of the works. The landowner has a legal responsibility to control and suppress these species on their property under the Noxious Weed Act 1995. | During Construction | Ongoing | Project Manager & Construction Site Supervisor |
| Noxious weeds are to be managed in accordance with the expectations under the Biosecurity Act 2018. It is recommended that the plants be removed by physical removal, as herbicides may impact GGBF's and their habitat. | During Construction | Ongoing | Project Manager & Construction Site Supervisor |

| Action | Stage of construction | Frequency | Responsibility |
|---|---|---|---|
| Plant and equipment brought onto site must be cleaned and free of deleterious material, mud and other material that may harbour weed seeds | During Construction | Ongoing | Project Manager & Construction Site Supervisor |

**Specific Equipment or Resources**: Marking tape, pickets, temporary safety fence.

**Monitoring and Reporting:** Construction Site Supervisor

**Corrective Action:** Ensure "NO GO AREAS" are discussed in the toolbox talk daily.

## Appendix F: Noise Control Sub-plan

**Impacts:** Temporary loss of local amenity and potential for disruption to local residents during construction

**Objective/Performance target:** To minimise noise generation on site

**Performance indicator:** No complaints from excessive noise

| Action | Stage of construction | Frequency | Responsibility |
|---|---|---|---|
| All neighbouring landowners to be notified of works prior to commencement. | Pre-Construction | Once | Contractor's Project Manager |
| All equipment used on the site is to be fitted with appropriate muffling equipment to ensure that the machinery operates below the minimum acceptable noise levels. | Construction | Daily<br>Monthly | Plant Operator<br>Construction Site Supervisor |
| All construction staff and contractors are to be aware of potential noise impacts to residents and limit unnecessary noise, e.g. shouting, slamming doors, use of unnecessary reversing movements etc. | Construction | Daily | Construction Site Supervisor |
| All works to be carried out to comply with the approved work hours:<br>• Monday to Friday 7:00AM to 5:00PM<br>• Saturday 8:00AM to 1:00PM<br>No work outside these times or public holidays unless approved | Construction | Daily | Construction Site Supervisor |
| Any local complaints considered & addressed as part of site incident reporting system. | Ongoing | As required | Construction Site Supervisor |

**Specific Equipment or Resources**:

**Monitoring and Reporting:** Construction Site Supervisor to monitor and report on any excessively noisy plant or equipment.

**Corrective Action:** Address each issue as it arises and report through the incident reporting system.

## Appendix G: Air Quality and Dust Control Sub-plan

### Impacts:

- Potential for dust generation from material movement
- Potential for exhaust and other emissions from vehicles, plant and equipment to impact on neighbours
- Potential to track mud/dirt onto public roads

**Objective/Performance target:**

- Minimise dust creation
- No poorly serviced/excessively noisy vehicles/plant on site

**Performance indicator:** No complaints regarding dust or other emissions from neighbouring properties or passers-by.

| Action | Stage of construction | Frequency | Responsibility |
|---|---|---|---|
| Significant dust creating works are not to be undertaken on days with high winds. | Construction | Daily | Construction Site Supervisor |
| Cover loads and sweep roadways regularly. | Construction | Daily (as required) | Construction Site Supervisor |
| Maintain vehicles, plant and equipment in good working order to reduce exhaust and other emissions. | Construction | As required | Construction Site Supervisor |
| Use of water during excavation and roadworks to suppress dust generation if necessary or cover exposed excavation areas with geotextiles. | Construction | As required | Construction Site Supervisor |

**Specific Equipment or Resources**: Water truck, geotextiles, sediment fence, sand bags

**Monitoring and Reporting:** Construction Site Supervisor to monitor dust levels as work proceeds and that ensure vehicles, plant and equipment are well maintained.

**Corrective Action:** Cease works and implement dust suppression techniques if excess dust is being produced. A dust suppressant additive may be required on stockpiles if this becomes an issue. Construction works are to cease if dust plumes are "uncontrollable".

## Appendix H: Waste Management Sub-plan

**Impacts:** Adverse impacts on surrounding environment from poor waste management on-site

### Objective/Performance target:

- No evidence of litter or refuse generated from construction activities on completion of works
- Recycling of waste material where possible
- Improve staff and contractor awareness of waste management issues on construction sites

### Performance indicator:

- Waste disposal receipts recorded correctly
- Number of reported incidents relating to waste disposal
- Volume of waste material requiring disposal post-construction

| Action | Stage of construction | Frequency | Responsibility |
|---|---|---|---|
| Site to be kept clean and maintained in a tidy condition | Construction | Daily | Construction Site Supervisor |
| Wastes to be managed to minimise off-site disposal and staff and contractors to be trained in the principles of "avoid-reduce-recycle-dispose". | Construction | Daily | Construction Site Supervisor |
| Waste disposal records to be maintained on site for materials disposed off site | Construction | As required | Construction Site Supervisor |

**Specific Equipment or Resources**: Waste receptacles including recycling bins

**Monitoring and Reporting:** Construction Site Supervisor

**Corrective Action:** Discussion in waste management on construction sites to be included in site induction.

## Appendix I: Action Checklist

| Action | Responsibility | Stage/Frequency | Date Completed | Initial |
|---|---|---|---|---|
| Install barricading fencing and construction signage around worksite | Construction Site Supervisor | Pre-Construction/Daily | | |
| Install erosion and sediment controls as per Erosion and Sediment Control Plan (ESCP) and maintained during course of works. | Construction Site Supervisor | Pre-construction & Construction/Daily | | |
| Machinery regularly cleaned, serviced and degreased prior to entering work site and emergency spill kit to be made available at site at all times | Construction Site Supervisor | Construction/Daily | | |
| Strategic placement of temporary construction and waste material stockpiles at least 2m away from roads, and away from concentrated flows. | Construction Site Supervisor | Construction/As required | | |
| Chemical or fuel spills must be contained immediately. Client should be immediately notified and the contaminated material shall be cleaned-up and disposed of appropriately. | Construction Site Supervisor | Construction/As required | | |
| Removal of trees to be limited to those indicated on the design plans | Construction Site Supervisor | Construction | | |
| All equipment used on the site is to be fitted with appropriate noise and exhaust muffling equipment to ensure that the machinery operates below the acceptable minimum level noise generation levels. | Plant Operator Construction Site Supervisor | Construction/Daily & Monthly | | |
| All site personnel working on site to be aware of potential noise impacts to residents and limit unnecessary noise, | Construction Site Supervisor | Construction/Daily | | |

| Action | Responsibility | Stage/Frequency | Date Completed | Initial |
|---|---|---|---|---|
| e.g. Shouting, slamming doors, use of unnecessary reversing movements etc. | | | | |
| All works to be carried out to comply with the approved work hours:<br>• Monday to Friday 7:00AM to 5:00PM<br>• Saturday 8:00AM to 1:00PM<br>No work outside these times or public holidays unless approved | Construction Site Supervisor | Construction/Daily | | |
| Any local resident complaints are to be considered and addressed as part of site incident reporting system. | Construction Site Supervisor | Ongoing/ If complaints arise. | | |
| Significant dust creating works are not to be undertaken during significant wind events. | Construction Site Supervisor | Construction/Daily | | |
| Cover loads and sweep roadways regularly | Construction Site Supervisor | Construction/Daily – Each Delivery | | |
| Seal off stockpiles or cover during large rain events. | Construction Site Supervisor | Construction/Daily | | |
| Maintain vehicles, plant and equipment in good working order to reduce exhaust and other emissions | Construction Site Supervisor | Construction/As required | | |
| Use of water during excavation and roadworks to suppress dust generation if necessary or cover exposed excavation areas with geotextiles. | Construction Site Supervisor | Construction/As required | | |
| Site to be kept clean and maintained in a tidy condition | Construction Site Supervisor | Construction | | |
| Wastes to be managed on site to minimise off-site disposal. | Construction Site Supervisor | Construction/Daily | | |
| Waste spoil material to be disposed offsite to be classified and disposed at appropriate facility | Construction Site Supervisor | Construction/As required | | |

## Appendix J: Inspection, Monitoring and Testing Report Form

The checklist below will be completed by the Site Supervisor to ensure all the management measures in the sub-plans are being implemented.

| **Project title and No.:** | Remediation & Civilworks 21F School Drive | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | **M** | **T** | **W** | **T** | **F** | **S** | **Notes** |
| **Week Starting:** | | | | | | | | | | |
| | | | | | | | | | | |
| **Item** | **Monitoring/Inspection** | **Frequency** | **Responsibility** | | | | | | | |
| 1 | Access and Public Safety | | | | | | | | | |
| | | | | | | | | | | |
| 2 | Erosion and Sediment Control | | | | | | | | | |
| | | | | | | | | | | |
| 3 | Soil and Water Management | | | | | | | | | |
| | | | | | | | | | | |
| 4 | Vegetation Management | | | | | | | | | |
| | | | | | | | | | | |
| 5 | Tree protection | | | | | | | | | |
| | | | | | | | | | | |
| 6 | Wildlife Management | | | | | | | | | |
| | | | | | | | | | | |
| 7 | Noise Control | | | | | | | | | |
| | | | | | | | | | | |
| 8 | Air Quality and Dust Control | | | | | | | | | |
| | | | | | | | | | | |
| 9 | Waste Management | | | | | | | | | |
| | | | | | | | | | | |

**Corrective Action**

| **Item** | **Action Required** | **Responsibility** | **Completion Date** | **Signature** |
|---|---|---|---|---|
| | | | | |

## Appendix K: Unexpected Finds Procedure

There is a potential for previously unidentified contamination to be present within expected materials for the site.

**Impacts:** Material maybe contaminated and cross contaminate other material on site
Works cease and impact project
Possible affect on employee health
Possible impact on environment

### Objective/Performance target:

- Works to cease if 'Unidentified Find' observed
- Identify the 'Unexpected Find'
- Manage and dispose of material as necessary without impact to other materials.

### Main Features:

- Material containing plastics, metal etc
- Material with obvious unnatural odour ie fuel, solvent
- Material that is noticeably stained in colour
- Asbestos or asbestos containing material
- Material with fibres visible ie friable asbestos
- Groundwater contamination ie sheens, odours etc in ground water
- Presence of underground infrastructure ie old sumps, tanks etc
- Material that has evidently been dumped at site previously

### Implementation Process:

- Cease works and contact Supervisor
- Assess the affected area
- If assessed as High Risk area to be isolated against unintended access (warning signs etc)
- Evaluate material and determine if:
    a) presents risk to personnel health
    b) site needs to be remediated
    c) needs to be disposed offsite to suitable licensed facility
- Implement controls as determined to managed the 'Unexpected Find'
- Record details of 'Unexpected Find' and document control measures and actions taken

**UNEXPECTED FINDS REGISTER**

**Project Name:**
**Project Number:**

| UFP No. | Date Identified | Identified By (Name) | Location (Ch) | Description (Material, odour etc) | Action Taken | Status |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## Appendix L: Contaminated Land Sub-plan

### Impacts:

- Material may be contaminated and cross contaminate other material on site
- Works cease and impact project
- Possible effect on employee health
- Possible impact on environment

### Objective/Performance target:

- To comply with legislative requirements.
- Ensure that hazardous/contaminated material from site does not cause an environmental nuisance / harm and is handled, categorised, tracked and placed in accordance with the Remedial Action Plan JME20005-3 (Revision July 2021) - 21D and 21F School Drive Tomago
- No exacerbation of contamination during works
- No environmental incidents involving contaminated/hazardous materials
- No pollution events of the surrounding environment by contaminated materials
- All movement of contaminated materials is tracked

### Mitigation Measures:

| Action | Stage of construction | Frequency | Responsibility |
|---|---|---|---|
| A suitably qualified environmental practitioner to conduct onsite supervision during the earthworks processes who will provide framework and protocols around the identification and management of contaminated materials. Along with OH&S protocols & PPE related to contaminated materials | Pre-construction | Prior to commencement | Project Manager, Site Supervisor, Environmental Supervisor |
| GCE to prepare a materials management plan outlining material reuse and disposal | Pre-construction | Prior to commencement | Project Manager, Site Supervisor, Environmental Supervisor |
| A suitably qualified environmental | Construction | As required | Project Manager, Site |

| Action | Stage of construction | Frequency | Responsibility |
|---|---|---|---|
| practitioner to verify key hold points within RAP document | | | Supervisor, Environmental Supervisor |
| Waste management measures to be implemented include:<br>• All waste to be disposed of at a licenced facility<br>• Waste to be classified prior to disposal – refer to NSW EPA Waste Classification guidelines (2015)<br>• Records and quantity of all onsite and offsite waste to be maintained<br>• Survey records on validated surfaces and capping layers to be maintained<br>• Material testing & placement records for cap to be maintained (ie. Permeability, compaction, etc.) | Construction | As required | Project Manager, Site Supervisor, Environmental Supervisor |
| At completion of works all records of contaminated material management to be reported for inclusion in validation report | At Completion | Post completion of work | Project Manager, Site Supervisor, Environmental Supervisor |

**Specific Equipment or Resources**: Geotextile marker fabric, PPE, plastic sheeting, signage, temporary safety fencing, temporary construction signs

**Monitoring and Reporting:** Construction Site Supervisor, Project Manager

**Corrective Action:** Cease work and obtain advice of Environmental Supervisor if performance targets not achieved

**Appendix M: Non-conformance register**

**Non-conformance Register**
GCE-Form 12-01 Rev3
22/06/17

Project: REMEDIATION & CIVILWORKS - 21F SCHOOL DR TOMAGO

| NCR No. | Description | Date Opened | Date Closed |
|---|---|---|---|
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## Appendix N: Complaints register

**Project Name: REMEDIATION & CIVILWORKS - 21F SCHOOL DR TOMAGO**

| Date | Time | How was complaint made (phone, meeting, letter, email, etc.) | Name, address, contact telephone number of complainant | Nature of complaint | Action taken in response including follow up contact with the complainant | Any monitoring to confirm that the complaint has been satisfactorily resolved | If no action was taken, the reasons why no action was taken |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
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| | | | | | | | |

## Appendix O: Approved Development Plans

# REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT

## LOT 8 & 11 DP270328, 21D & 21F SCHOOL DRIVE TOMAGO
## INTERNAL CIVIL WORKS




LOCALITY PLAN

NORTHROP

DRAWING SCHEDULE

| DWG No. | DRAWING TITLE |
|---|---|
| C1.1 | COVER SHEET |
| C1.3 | SITE PLAN |
| C2.1 | CONCEPT SEDIMENT & EROSION CONTROL PLAN |
| C2.2 | CONCEPT SEDIMENT & EROSION CONTROL DETAILS |
| C2.3 | CONCEPT BULK EARTHWORKS PLAN |
| C2.4 | CONCEPT LONG SECTIONS |
| C3.1 | CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN - SHEET 1 |
| C3.2 | CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN - SHEET 2 |
| C3.3 | CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN - SHEET 3 |
| C5.1 | CONCEPT CIVIL DETAILS - SHEET 1 |

DRAWN KATHLEEN TURTON DESIGNED ROBERT SUCKLING JOB MANAGER BEN CLARK VERIFIER

NOT FOR CONSTRUCTION

| REVISION | DESCRIPTION | ISSUED | VER'D | APP'D | DATE |
|---|---|---|---|---|---|
| 1 | PRELIMINARY | KT | | | 07.08.20 |
| A | DEVELOPMENT APPLICATION | KT | | | 28.08.20 |

CLIENT: REMONDIS WORKING FOR THE FUTURE

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

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PROJECT: REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT 21D & 21F SCHOOL DRIVE, TOMAGO

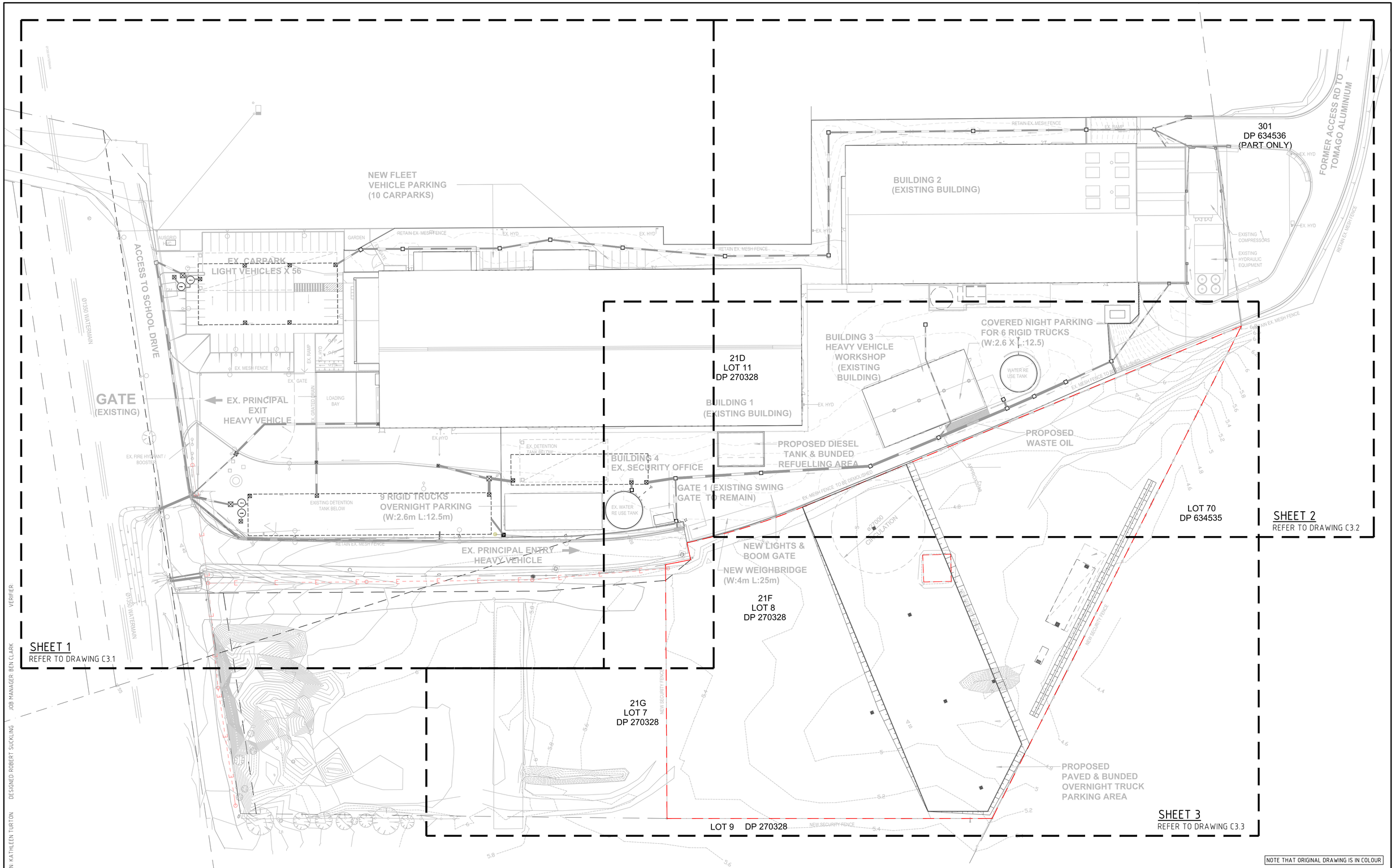
DRAWING TITLE: INTERNAL CIVIL WORKS COVER SHEET

JOB NUMBER: NL201175

DRAWING NUMBER: C1.1

REVISION: A

DRAWING SHEET SIZE = A1




VERIFIER
JOB MANAGER BEN CLARK
DESIGNED ROBERT SUCKLING
DRAWN KATHLEEN TURTON

NOTE THAT ORIGINAL DRAWING IS IN COLOUR

NOT FOR CONSTRUCTION

| REVISION | DESCRIPTION | ISSUED | VER'D | APP'D | DATE |
|---|---|---|---|---|---|
| A | DEVELOPMENT APPLICATION | KT | | | 28.08.20 |
| B | DEVELOPMENT APPLICATION | KT | | | 10.11.20 |

CLIENT
REMONDIS
WORKING FOR THE FUTURE
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PROJECT
REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT
21D & 21F SCHOOL DRIVE, TOMAGO

DRAWING TITLE
INTERNAL CIVIL WORKS CONCEPT SITE PLAN

JOB NUMBER NL201175
DRAWING NUMBER C1.3
REVISION B
DRAWING SHEET SIZE = A1

## LEGEND

- DENOTES SITE BOUNDARY LINE
- DENOTES EXISTING TO BE DEMOLISHED
- DENOTES COMBINED SITE/SILT FENCE 'SILTMASTER' OR SIMILAR, INSTALLED IN ACCORDANCE WITH DETAIL SD6-8 OF THE BLUEBOOK.
- DENOTES TEMPORARY CONTRACTORS VEHICULAR ACCESS POINT. CONSTRUCT A STABILISED SITE ACCESS IN ACCORDANCE WITH DETAIL SD6-14 OF THE BLUE BOOK OR PROVIDE A SHAKEDOWN CATTLE GRID AT ENTRANCE POINT TO REDUCE LIKELIHOOD OF SEDIMENT BEING TRAFFICKED OFF-SITE
- DENOTES GEOTEXTILE INLET FILTER INSTALLED IN ACCORDANCE WITH DETAIL SD6-12 OF THE BLUE BOOK
- INDICATES MESH & GRAVEL INLET FILTER INSTALLED IN ACCORDANCE WITH DETAILS SD6-11 OF THE BLUE BOOK
- DENOTES INDICATIVE LOCATION OF STOCKPILE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH DETAIL SD4-1 OF THE BLUE BOOK

## SEDIMENT & EROSION CONTROL NOTES

1. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH RELEVANT ORDINANCES AND REGULATIONS; NOTE IN PARTICULAR THE REQUIREMENTS OF LANDCOMS MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION' (THE 'BLUE BOOK').
2. INSTALL SEDIMENT PROTECTION FILTERS ON ALL NEW AND EXISTING STORMWATER INLET PITS IN ACCORDANCE WITH EITHER THE MESH AND GRAVEL INLET FILTER DETAIL SD6-11 OR THE GEOTEXTILE INLET FILTER DETAIL SD6-12 OF THE 'BLUE BOOK'.
3. ESTABLISH ALL REQUIRED SEDIMENT FENCES IN ACCORDANCE WITH DETAIL SD6-8 OF THE 'BLUE BOOK'.
4. INSTALL SEDIMENT FENCING AROUND INDIVIDUAL BUILDING ZONES/AREAS AS REQUIRED AND AS DIRECTED BY THE SUPERINTENDENT.
5. ALL TRENCHES INCLUDING ALL SERVICE TRENCHES AND SWALE EXCAVATION SHALL BE SIDE-CAST TO THE HIGH SIDE AND CLOSED AT THE END OF EACH DAYS WORK.
6. THE CONTRACTOR SHALL ENSURE THAT ALL VEGETATION (TREE, SHRUB & GROUND COVER) WHICH IS TO BE RETAINED SHALL BE PROTECTED DURING THE DURATION OF CONSTRUCTION. REFER ARCHITECTS PLANS FOR TREES TO BE KEPT.
7. ALL VEGETATION TO BE REMOVED SHALL BE MULCHED ONSITE AND SPREAD/STOCKPILED AS DIRECTED BY THE SUPERINTENDENT.
8. STRIP TOPSOIL IN AREAS DESIGNATED FOR STRIPPING AND STOCKPILE FOR RE-USE AS REQUIRED. ANY SURPLUS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH EPA GUIDELINES.
9. CONSTRUCT AND MAINTAIN ALL MATERIAL STOCKPILES IN ACCORDANCE WITH DETAIL SD4-1 OF THE 'BLUE BOOK' (INCLUDING CUT-OFF SWALES TO THE HIGH SIDE AND SEDIMENT FENCES TO THE LOW SIDE).
10. ENSURE STOCKPILES DO NOT EXCEED 2.0m HIGH. PROVIDE WIND AND RAIN EROSION PROTECTION AS REQUIRED IN ACCORDANCE WITH THE 'BLUE BOOK'.
11. PROVIDE WATER TRUCKS OR SPRINKLER DEVICES DURING CONSTRUCTION AS REQUIRED TO SUPPRESS DUST.
12. ONCE CUT/FILL OPERATIONS HAVE BEEN FINALIZED ALL DISTURBED AREAS THAT ARE NOT BEING WORKED ON SHALL BE RE-VEGETATED AS SOON AS IS PRACTICAL.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING A DETAILED WRITTEN RECORD OF ALL EROSION & SEDIMENT CONTROLS ON-SITE DURING THE CONSTRUCTION PERIOD. THIS RECORD SHALL BE UPDATED ON A DAILY BASIS & SHALL CONTAIN DETAILS ON THE CONDITION OF CONTROLS AND ANY/ ALL MAINTENANCE, CLEANING & BREACHES. THIS RECORD SHALL BE KEPT ON-SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE FOR INSPECTION BY THE PRINCIPAL CERTIFYING AUTHORITY AND THE SUPERINTENDENT DURING NORMAL WORKING HOURS.

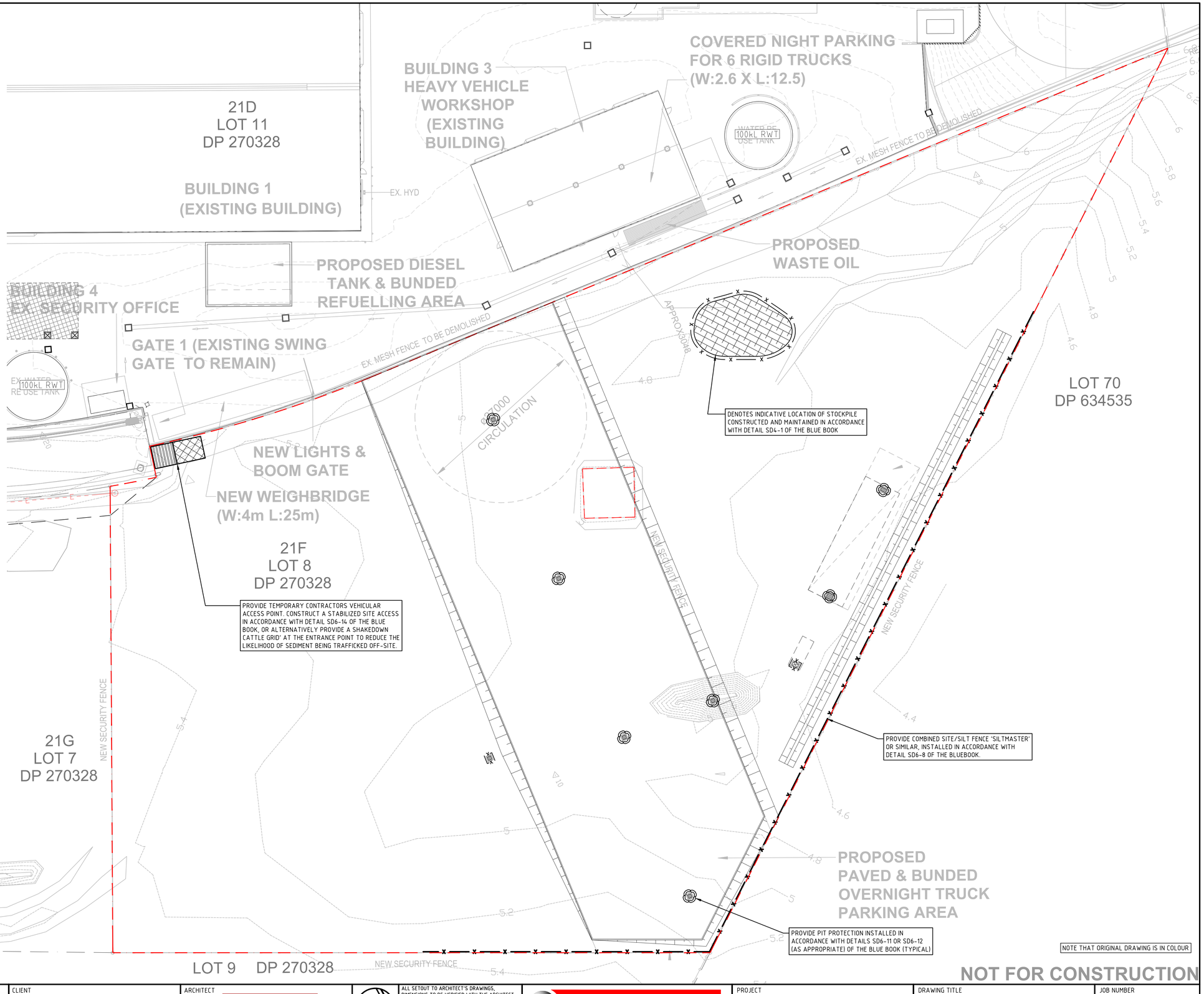
THE CONTRACTOR SHALL ENSURE COUNCIL ASSETS AND THE UTILITIES ARE PROTECTED AT ALL TIMES. ANY AND ALL DAMAGES TO COUNCIL ASSETS AND/OR UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SPECIFICATION OF COUNCIL AND THE UTILITIES AUTHORITY AND AT NO COST TO THE PRINCIPAL OR NORTHROP CONSULTING ENGINEERS.

## SEDIMENT BASIN SIZING CALCULATION

THE SITE IS LOCATED WITHIN THE TEA GARDENS SOIL LANDSCAPE AND PRIMARILY CONSISTS OF SILTY SANDS AND SANDS, WHICH HAS THE FOLLOWING PROPERTIES (IN ACCORDANCE WITH TABLE C13 OF THE 'BLUE BOOK'.

SITE PARAMETERS

| CONSTRAINT | VALUE |
|---|---|
| SEDIMENT TYPE | C |
| SOIL HYDROLOGY GROUP | A |
| K = SOIL ERODIBILITY (K-FACTOR) | 0.016 |
| R = RAINFALL EROSIVITY (R-FACTOR) | 2411 |
| S = 2 YEAR, 6 HOUR STORM INTENSITY | 10.5mm/hr (TOMAGO) |
| LS = SLOPE LENGTH/GRADIENT | 0.19 (80m SLOPE @ 1% GRADE) |
| P = EROSION CONTROL PRACTICE (P-FACTOR) | 1.3 (TYPICAL) |
| C = GROUND COVER (C-FACTOR) | 1.0 (TYPICAL FOR STRIPPED SITES) |
| SOIL LOSS (RUSLE METHOD) (tonnes/ha/yr) | 9.5$m^3$/Ha/Yr |
| EROSION HAZARD (TABLE 4.2 BLUE BOOK) | VERY LOW SOIL CLASS 1 |
| TOTAL SITE RUN-OFF IS LESS THAN 150$m^3$/Yr. BASIN/TANKS NOT REQUIRED. | |




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NOT FOR CONSTRUCTION

DESIGNED ROBERT SUCKLING
DRAWN KATHLEEN TURTON
JOB MANAGER BEN CLARK
VERIFIER

| REVISION | DESCRIPTION | ISSUED | VER'D | APP'D | DATE |
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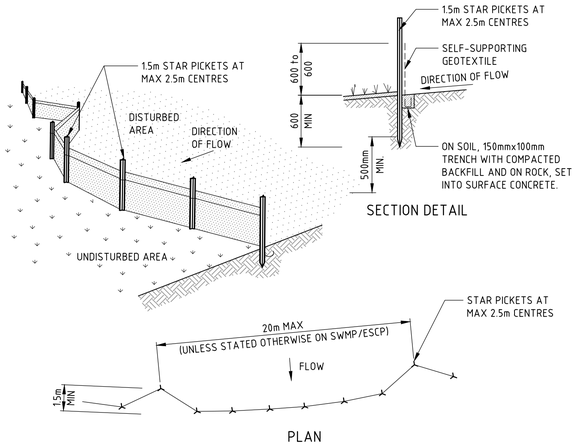
PLANS 1:300@A1 0 3 6 9 12 15m


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PROJECT
REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT
21D & 21F SCHOOL DRIVE, TOMAGO

DRAWING TITLE
INTERNAL CIVIL WORKS CONCEPT SEDIMENT & EROSION CONTROL PLAN

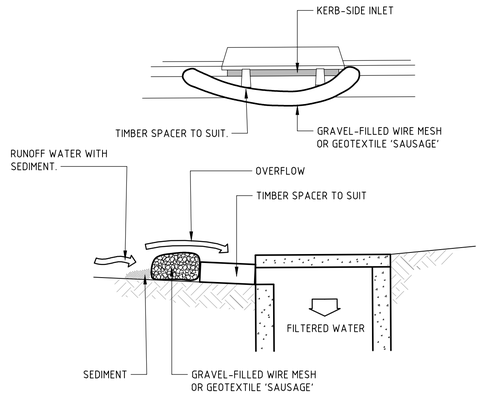
JOB NUMBER NL201175
DRAWING NUMBER C2.1
REVISION B
DRAWING SHEET SIZE = A1




## CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

# SEDIMENT FENCE (SD 6-8)

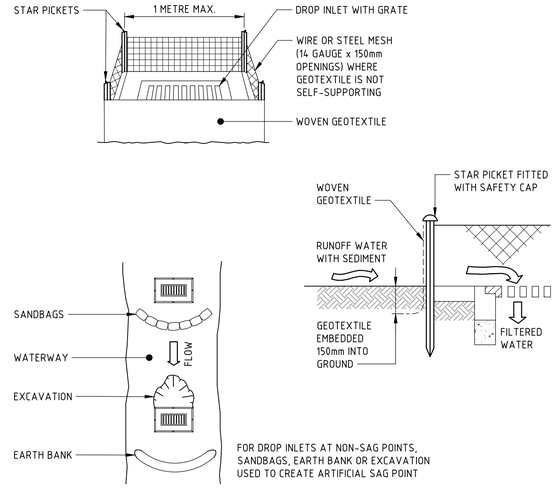



NOTE:THIS PRACTICE ONLY TO BE USED WHERE SPECIFIED IN APPROVED SWMP/ESCP.

## CONSTRUCTION NOTES

1. INSTALL FILTERS TO KERB INLETS ONLY AT SAG POINTS.
2. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
6. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADEN WATERS CANNOT PASS BETWEEN.

# MESH AND GRAVEL INLET FILTER (SD 6-11)

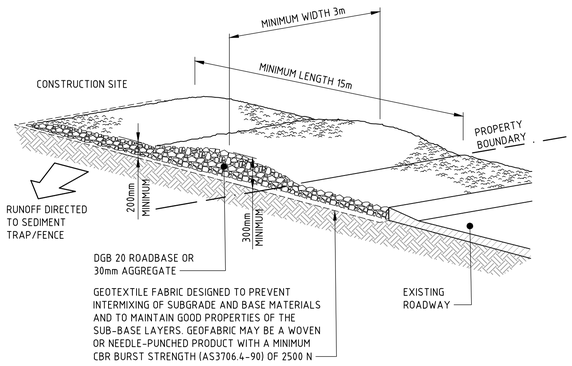



FOR DROP INLETS AT NON-SAG POINTS, SANDBAGS, EARTH BANK OR EXCAVATION USED TO CREATE ARTIFICIAL SAG POINT

## CONSTRUCTION NOTES

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

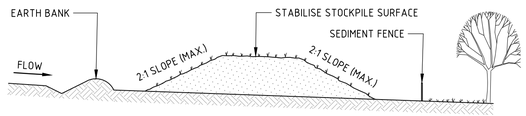
# GEOTEXTILE INLET FILTER (SD 6-12)




## CONSTRUCTION NOTES

1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METRES WIDE.
5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.

# STABILISED SITE ACCESS (SD 6-14)




## CONSTRUCTION NOTES

1. PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2m DOWNSLOPE.

# STOCKPILES (SD 4-1)

DRAWN KATHLEEN TURTON DESIGNED ROBERT SUCKLING JOB MANAGER BEN CLARK VERIFIER

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PROJECT: REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT 21D & 21F SCHOOL DRIVE, TOMAGO

DRAWING TITLE: INTERNAL CIVIL WORKS CONCEPT SEDIMENT & EROSION CONTROL DETAILS

JOB NUMBER: NL201175

DRAWING NUMBER: C2.2

REVISION: A

DRAWING SHEET SIZE = A1

# BULK EARTHWORKS PLAN

## LEGEND

24.8 — DENOTES EXISTING CONTOUR LINES

24.8 — DENOTES BULK EARTHWORKS CONTOUR LINES

4.29 — DENOTES DEPTH OF PROPOSED CUT (-VE) OR FILL (+VE)

## BULK EARTHWORKS NOTES

1. WHERE NOT NOMINATED ON PLAN, BULK EARTHWORKS LEVELS HAVE BEEN DETERMINED BY LOWERING THE FINISHED SURFACE LEVELS BASED ON THE FOLLOWING THICKNESSES AND ALLOWANCES
   - TRAFFICABLE CONCRETE PAVEMENT 300mm
   - LANDSCAPE & MISC. AREAS 150mm
2. THE EXISTING GROUND SURFACE WAS LOWERED BY 150mm UNIFORMLY TO ACCOUNT FOR THE REMOVAL OF VEGETATION, AND TOP SOILS.
   - THIS VOLUME IS ESTIMATED (BASED ON THE DEVELOPMENT AREA OF 3790m²) TO BE APPROXIMATELY 568m³ (TOPSOIL - CUT).
3. BULKING FACTORS OF 1.0 WAS USED FOR BOTH CUT AND FILL MATERIAL.
4. THE APPROXIMATE SITE EARTHWORKS VOLUMES BASED ON THE NOTED PAVEMENT THICKNESSES ARE OUTLINED BELOW:
   - CUT: 321 m³
   - FILL: 553 m³
   - NET: 232m³ (FILL) + 568m³ (TOPSOIL - CUT)
5. THE ABOVE VOLUMES ARE TO BE ASSESS NOTING THE FOLLOWING:
   - NO ALLOWANCE HAS BEEN MADE FOR THE REMOVAL OR OVER EXCAVATION OF UNSUITABLE OR CONTAMINATED MATERIAL.
   - NO ALLOWANCE HAS BEEN MADE FOR DETAILED EXCAVATIONS SUCH AS, SERVICES TRENCHING, SEDIMENT BASIN ETC.
   - NO ALLOWANCE HAS BEEN MADE FOR TEMPORARY CONSTRUCTION PLATFORMS.
6. THIS PLAN HAS BEEN PREPARED FOR INFORMATION PURPOSES ONLY AND IS INDICATIVE IN NATURE. THE EARTHWORKS CONTRACTOR IS TO VERIFY ALL LEVELS AND QUANTITIES AND PERFORM THEIR OWN BULK EARTHWORKS ASSESSMENT.

| Surface Analysis: Elevation Ranges | | | | |
|---|---|---|---|---|
| Number | Color | Minimum Elevation (m) | Maximum Elevation (m) | Volume (m3) |
| 1 | | -2.000 | -1.500 | 7 |
| 2 | | -1.500 | -1.000 | 74 |
| 3 | | -1.000 | -0.500 | 94 |
| 4 | | -0.500 | 0.000 | 146 |
| 5 | | 0.000 | 0.500 | 552 |
| 6 | | 0.500 | 1.000 | 2 |

21D
LOT 11
DP 270328

BUILDING 1
(EXISTING BUILDING)

EX. HYD

BUILDING 3
HEAVY VEHICLE
WORKSHOP
(EXISTING
BUILDING)

COVERED NIGHT PARKING
FOR 6 RIGID TRUCKS
(W:2.6 X L:12.5)

WATER RE
USE TANK

EX. MESH FENCE TO BE DEMOLISHED

PROPOSED
WASTE OIL

PROPOSED DIESEL
TANK & BUNDED
REFUELLING AREA

BUILDING 4
EX. SECURITY OFFICE

GATE 1 (EXISTING SWING
GATE TO REMAIN)

EX. WATER
RE USE TANK

NEW LIGHTS &
BOOM GATE

NEW WEIGHBRIDGE
(W:4m L:25m)

21F
LOT 8
DP 270328

LOT 70
DP 634535

DENOTES TEMPORARY BATTER TO
GEOTECHNICAL ENGINEERS SPECIFICATION
TO ALLOW FOR EXCAVATION

ALIGNMENT 3

ALIGNMENT 2

ALIGNMENT 1

DENOTES 1V:4H PERMANENT
LANDSCAPED BATTER TO EXISTING

21G
LOT 7
DP 270328

NEW SECURITY FENCE

PROPOSED
PAVED & BUNDED
OVERNIGHT TRUCK
PARKING AREA

LOT 9 DP 270328

NEW SECURITY FENCE

VERIFIER:
JOB MANAGER: BEN CLARK
DESIGNED: ROBERT SUCKLING
DRAWN: KATHLEEN TURTON

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PROJECT
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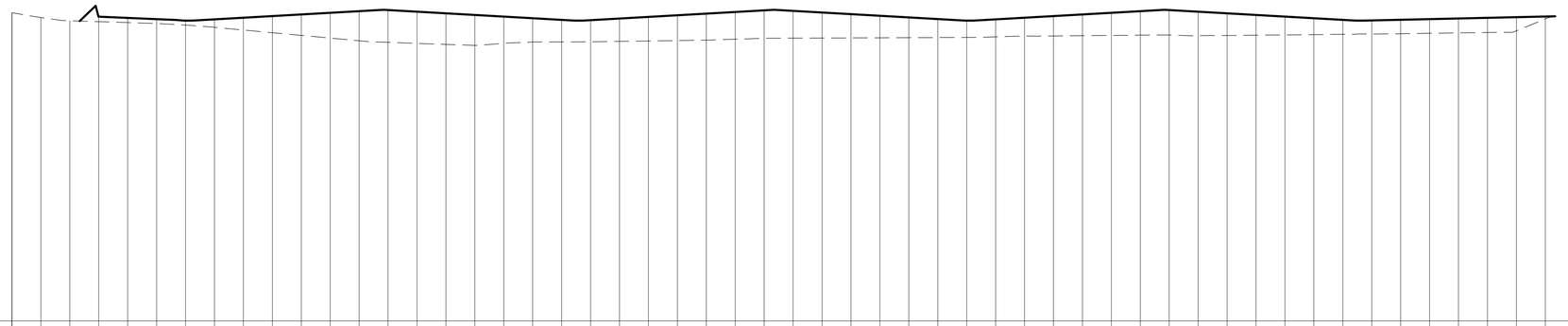
DRAWING TITLE
INTERNAL CIVIL WORKS CONCEPT BULK EARTHWORKS PLAN

JOB NUMBER NL201175

DRAWING NUMBER C2.3

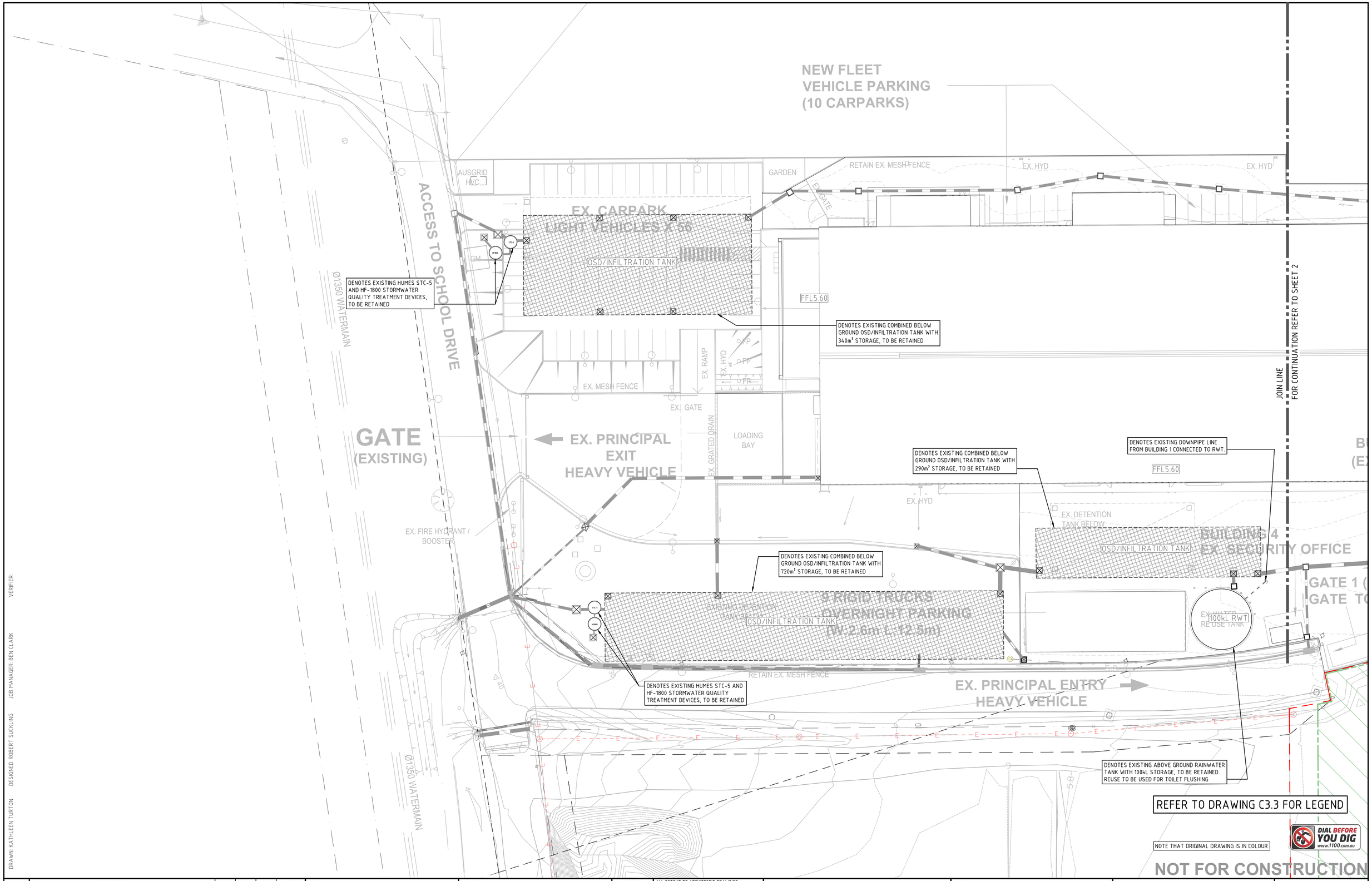
REVISION A

DRAWING SHEET SIZE = A1



VERTICAL 1:40
HORIZONTAL 1:200
Datum 1.000

| | | |




DRAWN: KATHLEEN TURTON DESIGNED: ROBERT SUCKLING JOB MANAGER: BEN CLARK VERIFIER:

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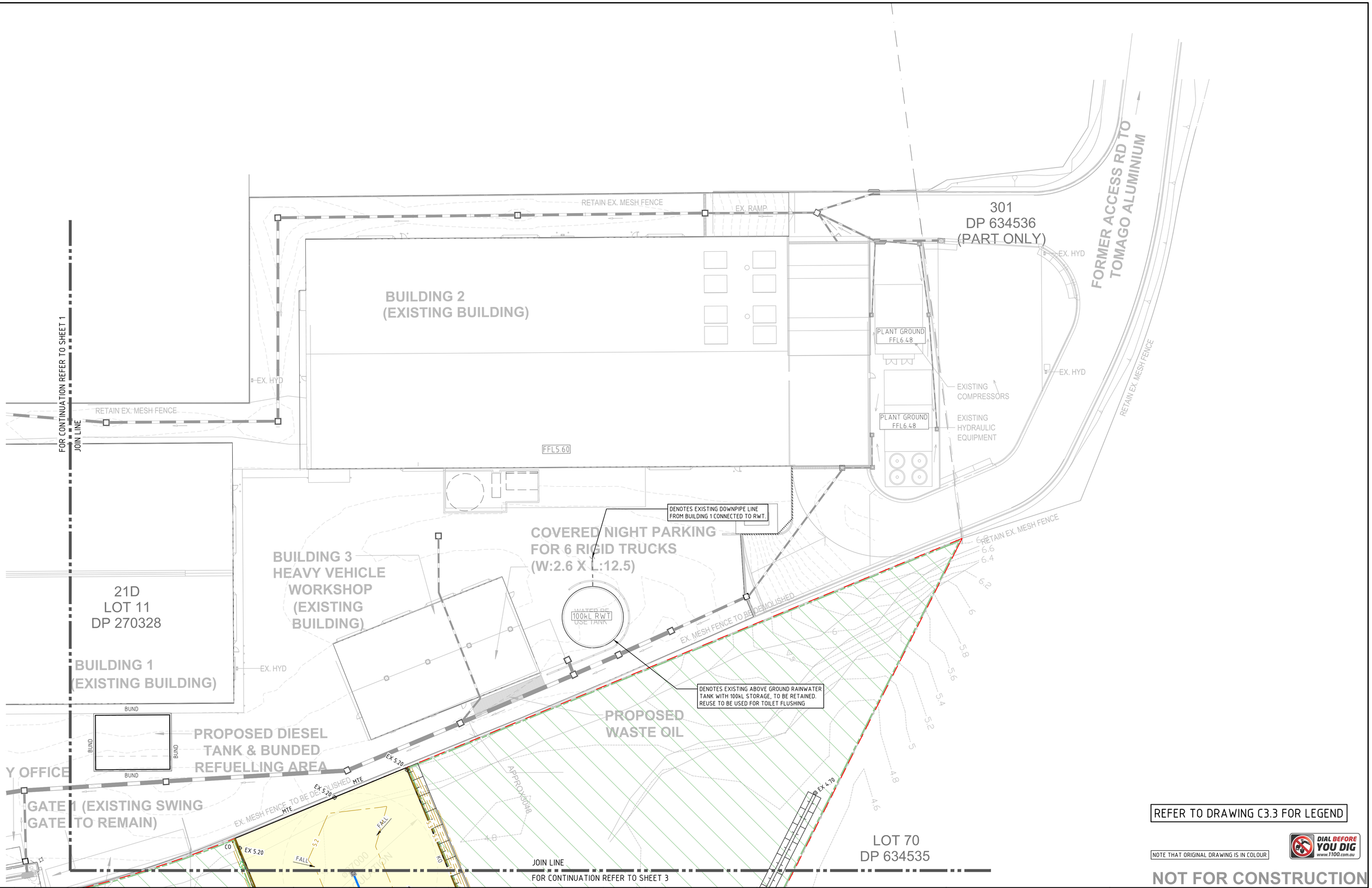
PROJECT
**REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT 21D & 21F SCHOOL DRIVE, TOMAGO**

DRAWING TITLE
**INTERNAL CIVIL WORKS CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN SHEET 1**

JOB NUMBER **NL201175**

DRAWING NUMBER **C3.1** REVISION **B**

DRAWING SHEET SIZE = A1




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DRAWING TITLE
**INTERNAL CIVIL WORKS CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN SHEET 2**

JOB NUMBER **NL201175**
DRAWING NUMBER **C3.2**
REVISION **B**
DRAWING SHEET SIZE = A1

## LEGEND

- DENOTES SITE BOUNDARY LINE
- DENOTES EXISTING TO BE DEMOLISHED
- DENOTES TRAFFICABLE PAVEMENT, REFER TO DETAIL
- DENOTES EXTENTS OF FUTURE HARDSTAND PAVEMENT (DEVELOPMENT SCENARIO 2)
- BUND — DENOTES PROPOSED BUND AROUND PERIMETER OF DIESEL TANK & REFUELLING AREA
- KO — DENOTES KERB ONLY
- PL 5.30 — DENOTES PROPOSED FINISHED SURFACE LEVEL
- EX 4.60 — DENOTES EXISTING SURFACE LEVEL
- MTE — DENOTES MATCH TO EXISTING LEVELS
- 44 — DENOTES EXISTING CONTOURS
- DENOTES APPROXIMATE BATTER EXTENT
- FALL — DIRECTION OF FALL IN FINISHED SURFACE
- DENOTES STORMWATER PIT (NEW / EXISTING)
- # — DENOTES STORMWATER PIT TO BE FITTED WITH 200um OCEAN PROTECT PIT FILTER INSERT WITH HYDROCARBON ABSORBENT PILLOW/OIL SOCK
- OSD — DENOTES BELOW GROUND ON-SITE DETENTION AND INFILTRATION SYSTEM
- Ø225 — DENOTES STORMWATER LINE & SIZE
- DENOTES EXISTING STORMWATER LINE
- SSD — DENOTES Ø100 SUBSOIL DRAINAGE LINE WITH NON-WOVEN GEOTEXTILE FILTER SOCK SURROUND LAID AT MIN 1% LONGITUDINAL GRADE & CONNECTED TO NEAREST STORMWATER PIT
- CO — DENOTES SUBSOIL DRAINAGE CLEAROUT
- DENOTES OVERLAND FLOW PATH
- E — DENOTES APPROXIMATE LOCATION OF EXISTING ELECTRICITY LINE

LOCATIONS OF EXISTING SERVICES ARE APPROXIMATE ONLY & MAY NOT BE COMPLETE. THE BUILDER IS RESPONSIBLE FOR LOCATING EXISTING INFRASTRUCTURE (CULVERTS, PITS, PIPES, SERVICES, INVERT & COVER LEVELS ETC) PRIOR TO COMMENCING CONSTRUCTION.

THE BUILDER SHALL ALLOW TO MODIFY ALL EXISTING SERVICE COVERS TO MATCH THE NEW PAVEMENTS, IN ACCORDANCE WITH THE RELEVANT AUTHORITIES REQUIREMENTS.

PROVIDE TEMPORARY TRAFFIC CONTROL IN ACCORDANCE WITH STATE & FEDERAL STATUTORY REQUIREMENTS AND LOCAL COUNCIL SPECIFICATIONS/REQUIREMENTS

NOTE: EXISTING STORMWATER DRAINAGE, RAINWATER TANKS AND INFILTRATION/DETENTION TANKS FOR 21D LOT11 TO BE RETAINED

NOTE: DRAWINGS TO BE READ IN CONJUNCTION WITH SOIL & WATER MANAGEMENT REPORT

### STORMWATER MANAGEMENT SUMMARY

| | DEVELOPMENT SCENARIO 1 | DEVELOPMENT SCENARIO 2 |
|---|---|---|
| DETENTION VOLUME | 100m³ | 385m³ |
| | 120m² INFILTRATION AREA | 450m² INFILTRATION AREA |
| WATER QUALITY | (x5) PIT FILTER INSERTS | (x20) PIT FILTER INSERTS |
| | (x6) FILTER CARTRIDGES | (x24) FILTER CARTRIDGES |

FOR CONTINUATION REFER TO SHEET 2

JOIN LINE

FOR CONTINUATION REFER TO SHEET 1

JOIN LINE

21D
LOT 11
DP 270328

BUILDING 3
HEAVY VEHICLE
WORKSHOP
(EXISTING
BUILDING)

COVERED NIGHT PARKING
FOR 6 RIGID TRUCKS
(W:2.6 X L:12.5)

BUILDING 1
(EXISTING BUILDING)

EX. HYD

DENOTES EXISTING DOWNPIPE LINE FROM BUILDING 1 CONNECTED TO RWT.

DENOTES BUND AROUND PERIMETER OF DIESEL TANK

BUND

PROPOSED DIESEL TANK & BUNDED REFUELLING AREA

DENOTES EXISTING DOWNPIPE LINE FROM BUILDING 1 CONNECTED TO RWT.

BUILDING 4
EX. SECURITY OFFICE

GATE 1 (EXISTING SWING GATE TO REMAIN)

EX. MESH FENCE TO BE DEMOLISHED

WATER RE-USE TANK
100kL RWT

DENOTES EXISTING ABOVE GROUND RAINWATER TANK WITH 100kL STORAGE, TO BE RETAINED. REUSE TO BE USED FOR TOILET FLUSHING.

DENOTES EXISTING ABOVE GROUND RAINWATER TANK WITH 100kL STORAGE, TO BE RETAINED. REUSE TO BE USED FOR TOILET FLUSHING.

PROPOSED WASTE OIL

PROVIDE SUBSOIL DRAINAGE LINE AROUND STORMWATER PITS WITHIN PAVEMENT. IMPERMEABLE GEOTEXTILE MEMBRANE TO EXTEND BELOW SUBSOIL DRAINAGE LINE (TYPICAL). REFER TO DETAIL

DENOTES 1V:4H BATTER IN EXISTING

EXISTING CONCRETE SLAB TO BE DEMOLISHED & DISPOSED OFF SITE

LOT 70
DP 634535

#PIT
CL5.15
IL4.50

NEW LIGHTS & BOOM GATE

NEW WEIGHBRIDGE
(W:4m L:25m)

21F
LOT 8
DP 270328

DENOTES 1V:4H BATTER IN EXISTING

#PIT
CL5.15
IL4.21

LOCALLY GRADE SURROUNDING LANDSCAPE TO FALL TOWARDS STORMWATER PIT. STORMWATER LINE TO BYPASS TREATMENT DEVICE

PIT
CL4.95
IL3.47

#PIT
CL5.15
IL3.92

#PIT
CL5.15
IL4.50

21G
LOT 7
DP 270328

NEW SECURITY FENCE

LOT 9 DP 270328

DENOTES LEVEL SPREADER MOUND 500mm WIDE TO DISPERSE OVERFLOW AS SHEET FLOW TO MIMIC NATURAL FLOW REGIME ON SITE

DENOTES BELOW GROUND COMBINED OSD (100m³ STORAGE) AND INFILTRATION SYSTEM (120m² AREA). ASSUMED INFILTRATION RATE OF 100mm/hr T.B.C. PRIOR TO CONSTRUCTION

IL3.17

IL3.48

IL3.37

DENOTES (x6) 460PSORB OCEAN PROTECT FILTER CARTRIDGES IN PRECAST PROPRIETARY HOUSING

EXISTING MATERIAL STOCKPILE TO BE RELOCATED ON SITE

#PIT
CL5.30
IL3.75
NOTE: INSTALL SHUT-OFF VALVE IN PIT TO OUTLET IN THE EVENT OF SPILLAGE OCCURRING. INSTALL LOW-FLOW DIVERSION WEIR

PROPOSED PAVED & BUNDED OVERNIGHT TRUCK PARKING AREA

NOTE THAT ORIGINAL DRAWING IS IN COLOUR

DIAL BEFORE YOU DIG www.1100.com.au

NOT FOR CONSTRUCTION

VERIFIER:
JOB MANAGER BEN CLARK
DESIGNED ROBERT SUCKLING
DRAWN KATHLEEN TURTON

| REVISION | DESCRIPTION | ISSUED | VER'D | APP'D | DATE |
|---|---|---|---|---|---|
| A | DEVELOPMENT APPLICATION | KT | | | 28.08.20 |
| B | DEVELOPMENT APPLICATION | KT | | | 10.11.20 |

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PROJECT: REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT 21D & 21F SCHOOL DRIVE, TOMAGO

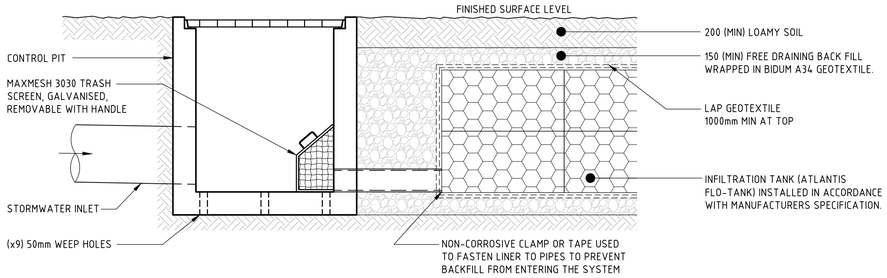
DRAWING TITLE: INTERNAL CIVIL WORKS CONCEPT STORMWATER MANAGEMENT & LEVELS PLAN SHEET 3

JOB NUMBER: NL201175

DRAWING NUMBER: C3.3

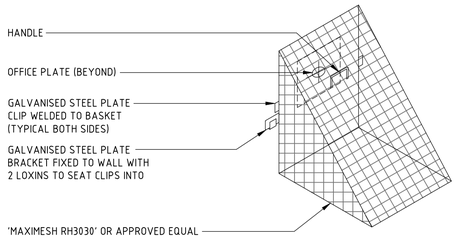
REVISION: B

DRAWING SHEET SIZE = A1

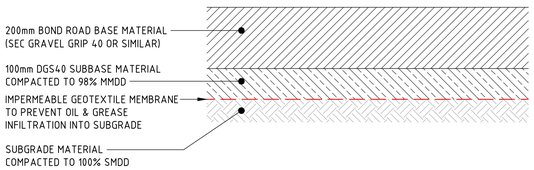



## TYPICAL SECTION OSD / INFILTRATION SYSTEM

NOTE: ASSUMED INFILTRATION RATE OF 100mm PER HOUR. INFILTRATION RATE TO BE CONFIRMED ONSITE VIA A DOUBLE RING INFILTROMETER TEST METHOD (ASTM D3385-18). CONTACT NORTHROP ONCE TEST RESULTS ARE AVAILABLE AS THIS MAY IMPACT THE SIZE OF THE INFILTRATION SYSTEM.

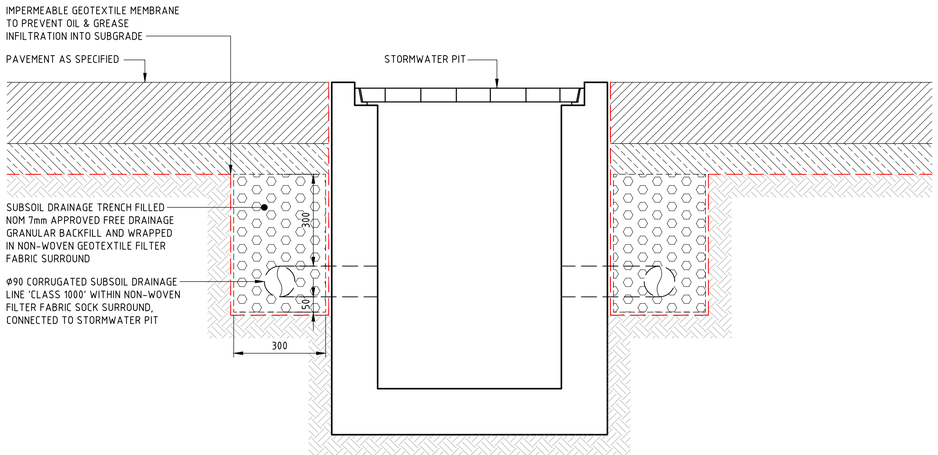



## TRASH SCREEN DETAIL




## INDICATIVE TRAFFICABLE PAVEMENT DETAIL

NOTE: PAVEMENT DESIGN TO BE CONFIRMED BY SUITABLY QUALIFIED GEOTECHNICAL ENGINEER FOLLOWING DETAILED GEOTECHNICAL INVESTIGATION DURING DETAILED DESIGN




## PAVEMENT SUBSOIL DETAIL AT STORMWATER PITS

VERIFIER:
JOB MANAGER: BEN CLARK
DESIGNED: ROBERT SUCKLING
DRAWN: KATHLEEN TURTON

NOT FOR CONSTRUCTION

| REVISION | DESCRIPTION | ISSUED | VER'D | APP'D | DATE |
|---|---|---|---|---|---|
| 1 | PRELIMINARY | KT | | | 07.08.20 |
| A | DEVELOPMENT APPLICATION | KT | | | 28.08.20 |
| | | | | | |
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DETAILS 1:10@A1 0 100 200 300 400 500

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PROJECT
**REMONDIS RESOURCE RECOVERY FACILITY & TRUCK PARKING DEPOT 21D & 21F SCHOOL DRIVE, TOMAGO**

DRAWING TITLE
**INTERNAL CIVIL WORKS CONCEPT CIVIL DETAILS SHEET 1**

JOB NUMBER **NL201175**
DRAWING NUMBER **C5.1**
REVISION **A**
DRAWING SHEET SIZE = A1

## Appendix P: Remedial Action Plan

JM Environments
0427 893 668
37 Tooke St
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ABN 67 166 341 288

# Remedial Action Plan



## 21D and 21F School Drive, Tomago

Prepared By:

John Howard BSc (Hons)
Environmental Scientist

Approved By:

James McMahon PhD (Chem)
Principal Environmental Scientist
Certified Environmental Practitioner CEnvP 1235
Site Contamination Specialist SC41110

Date: 17 July 2021

Reference: JME20005-3

# RECORD OF DISTRIBUTION

| Report File Name | Report Status | Date | Distributed to | Name | Notes |
|---|---|---|---|---|---|
| JME20005-3 Remedial Action Plan 21D and 21F School Drive Tomago | Original | 16/6/2020 | Remondis Australia Pty Ltd | Susie McBurney | |
| JME20005-3 Remedial Action Plan 21D and 21F School Drive Tomago | Revision 1 | 5/7/2021 | Remondis Australia Pty Ltd<br>GHD<br>Jackson Environment and Planning | Susie McBurney<br>Ian Gregson<br>Mark Jackson | Revision 1 addresses the auditors comments received by email and dated 29 May 2021. |
| JME20005-3 Remedial Action Plan 21D and 21F School Drive Tomago | Revision 2 | 15/7/2021 | Remondis Australia Pty Ltd<br>GHD<br>Jackson Environment and Planning | Susie McBurney<br>Ian Gregson<br>Mark Jackson | Revision 2 addresses the auditors comments received by email and dated 7 July 2021. |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

# EXECUTIVE SUMMARY

This report presents a Remedial Action Plan (RAP) for 21D and 21F School Drive, Tomago NSW (the site) undertaken by JM Environments (JME). Remondis Pty Ltd had indicated their intention to redevelop the site and commissioned this RAP to support a Development Application.

The site had previously been used for sand mining and metal manufacture and appeared to have been largely covered by sandy fill. It was considered possible that sandblasting had taken place on the site.

In the western part of the site (Lot 8), heavy metal contamination was detected at several locations in concentrations exceeding adopted ecological investigation levels. Contamination exceeding adopted human health investigation levels was limited to lead in one location near the eastern boundary of the site.

Remondis has indicated to JME that they plan to use Lot 8 for vehicle parking, as shown in Figure 6. This would necessitate the importation of road base material to form a suitable surface for these activities.

Accordingly, JME recommends a combination of removal of the lead in soil hotspot and capping of the significant zinc impacted area of the site.

Specifically, the remedial strategy will comprise the following:

- Removal and offsite disposal of anthropogenic waste from the northern end of Lot 8;
- Removal and offsite disposal of the lead impacted hotspot located at TP8.
- Clear and grub the proposed truck parking area;
- Level and fill the surface of the truck parking area;
- Placement of a marker layer ;
- Importation of road base; and
- Installation of a stormwater drainage system.

Since the remedial plan does not remove all the contamination from the site, there is an ongoing commitment required to manage the contamination remaining on site. This commitment will be addressed via a Long Term Environmental Management Plan (LTEMP)

JME recommends there is no duty to report the site contamination to the NSW EPA.

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Appendix A Previous Contamination Reports

# ACRONYMS

| | |
|---|---|
| AEC | Area of Environmental Concern |
| CEMP | Construction Environmental Management Plan |
| CLM Act | NSW Contaminated Land Management Act (1997) |
| COC | Contaminant of Concern |
| CSM | Conceptual Site Model |
| DCA | Detailed Contamination Assessment |
| DGV | default guideline value |
| DP | Deposited Plan |
| EIL | ecological investigation level |
| ENM | excavated natural material |
| EP&A Act | NSW Environmental Planning and Assessment Act 1979 |
| EPA | Environment Protection Authority |
| ESL | ecological screening level |
| GSW | General Solid Waste |
| ha | hectares |
| HIL | health investigation level |
| HSSE | health, safety, security and environmental |
| JME | JM Environments |
| LOR | limit of reporting |
| LTEMP | Long Term Environmental Management Plan |
| MBES | MB Engineering Solutions Pty Ltd |
| mbgl | metres below ground level |
| NEPM | National Environment Protection (Assessment of Site Contamination) Measure |
| POEO Act | NSW Protection of the Environment Operations Act (1997) |
| PPE | personal protective equipment |
| RAP | Remedial Action Plan |
| SEPP55 | NSW State Environmental Planning Policy No 55 – Remediation of Land |
| TRH | total recoverable hydrocarbons |
| VENM | virgin excavated natural material |
| WHS | Workplace Health and Safety |

# 1 INTRODUCTION

This report presents a Remedial Action Plan (RAP) for 21D and 21F School Drive, Tomago NSW (the site), commissioned by Remondis Pty Ltd and undertaken by JM Environments (JME). The site is identified as Lots 8 and 11 in Deposited Plan (DP) 270328 (as defined in the website maps.six.nsw.gov.au), and is approximately 3.9 hectares (ha) in area. The site location is shown in Figure 1, and Lot boundaries are shown in Figure 2.

## 1.1 Background

Remondis had indicated to JME their intention to redevelop the site. A Detailed Contamination Assessment (DCA) prepared by JME (herein referred to as JME20005-2, and attached in Appendix A) had identified localised areas of heavy metal contamination at concentrations exceeding default guideline values (DGVs) for commercial/industrial land use.

## 1.2 Objectives

The objectives of remediation, where contamination poses unacceptable risks to human health or the environment, are to render the site suitable for its proposed use, and to ensure that the environment is protected from contamination.

The objectives of the RAP are to:

- Identify Areas of Environmental Concern (AECs) within the site that require remediation for Contaminants of Concern (COCs) associated with former land uses;
- Select a technically appropriate methodology that addresses the financial, timing and logistical constraints of the client;
- Outline procedures for the preferred remediation method; and
- Outline procedures for validation, site control and workplace health and safety (WHS), as required.

## 1.3 Scope of Works

In order to achieve the objectives of the RAP, the following works were completed:

- Review of previous contamination reports;
- Summary of available suitable remediation technologies;
- Development of a suitable remediation strategy for the site;
- Development of remediation validation methodology, criteria and outcomes;
- Establishment of WHS measures to be undertaken during remedial works to protect the health and safety of the general public and the environment; and
- Preparation of a RAP (this document) for the proposed redevelopment.

# 2 SITE IDENTIFICATION

General site information is provided in Table 1. The site location is shown in Figure 1.

TABLE 1: SUMMARY OF SITE DETAILS

| | |
|---|---|
| Site Address: | 21D and 21F School Drive, Tomago NSW |
| Site Area: | Approximately 3.9ha |
| Site Identification: | Lots 8 and 11 DP 270328 at Tomago<br>Local government area of Port Stephens<br>Parish of Stockton<br>County of Gloucester |
| Current Land Use: | Vacant lot and warehouse containing overhead cranes |
| Previous Land Use: | Sand mining<br>Steel Manufacturing<br>Aluminium high voltage cable manufacturing (Midal Cables International Pty Ltd (Midal)). |
| Proposed Land Use: | Unknown |
| Adjoining Site Uses: | Varley (mechanical engineer) directly west of the site and Tomago Aluminium Smelter further to the west;<br>Vegetated and mostly unoccupied to the north and east;<br>Vacant land with some commercial/industrial premises to the south, and North Channel Hunter River further to the south. |
| Site Coordinates: | Easting 381044, Northing 6367180 |
| Current Zoning: | General Industrial |

# 3 PREVIOUS CONTAMINATION ASSESSMENTS

JME is aware of the following contamination assessments that have been undertaken on the site:

1. MB Engineering Solutions Pty Ltd (December 2012) Waste Classification Assessment Lot 11 McIntyre Road, Tomago (herein referred to as MBE2016);
2. MB Engineering Solutions Pty Ltd (April 2013) Excavated Natural Material Assessment Lot 11 McIntyre Road, Tomago (herein referred to as MBE2017);
3. MB Engineering Solutions Pty Ltd (May 2013) Excavated Natural Material Assessment Addendum Lot 11 McIntyre Road, Tomago (herein referred to as MBE2017A) and
4. EHO Consulting Environmental Site Assessment 21F & 21G School Drive, Tomago NSW 2322 (herein referred to as EHO2020)
5. JM Environments (June 2021) Preliminary Contamination Assessment 21D and 21F School Drive, Tomago (herein referred to as JME20005-2).
6. JM Environments (July 2021) Groundwater Contamination Assessment 21D and 21F School Drive, Tomago (herein referred to as JME20005-5.

JME20005-2 (which includes copies of JME2016, JME2017 and JME2017A), EHO2020 and JME20005-5 and attached in Appendix A.

**MBE2016**

The purpose of MBE2016 was to assess the insitu waste classification of the surface soils of Lot 11 prior to the Midal project construction. 2,000m$^3$ of surface soil and 7,000m$^3$ of subsoils were required to be disposed of for the Midal project. MBES partially relied on Midal Cables International Pty Limited – Phase 2 Contamination Site Assessment – Aluminium Rod and

Conductor Manufacturing Facility, Tomago NSW – May 2011" (GHD ref 22/15280/93866 R0) which included 17 boreholes and test pits and 23 samples were analysed for a suite of 13 heavy metals, 9 samples and composites were analysed for Total Petroleum Hydrocarbons/benzene, toluene, ethylbenzene and xylenes (TPH/BTEX) and Polynuclear Aromatic Hydrocarbons (PAH), and, 6 composite samples were analysed for Organochlorine Pesticides (OCP) and Polychlorinated Biphenyls (PCB). MBES did not rely on the volatile and semi-volatile organic analytical results for the composited samples. For MBE2016, ten test pits were excavated into the natural underlying sand which was intercepted around 0.7mbgs. Twenty two samples were analysed for BTEX, TRH, PAH and eight heavy metals. The samples analysed by MBES and GHD had chemical concentrations below the general solid waste (CT1) criteria and the ASC HIL D criteria. Although not explicitly stated in JME2016, the GHD phase 2 contamination assessment concluded that Lot 11 was suitable for redevelopment for industrial/commercial purposes without the requirement for further investigation or remediation.

**MBE2017**

The purpose of MBE2017 was to assess whether the insitu subsurface soils in Lot 11 met the criteria for excavated natural material (ENM) exemption to facilitate the removal of up to 9,000$m^3$ of excess spoil to be generated by the Midal Project. The Midal site was approximately 2.5 hectares, hence approximately 2.8m of soil, on average, was to be removed across the site. The top metre was classified as general waste in MBE2016, as such samples were collected at 1m and 2m depths and analysed as per the Excavated Natural Material Exemption (ENM) of the time. Thirty-four of thirty-five locations were assessed as meeting the ENM Exemption criteria. The one location that did not meet the ENM criteria was assessed as suitable to remain on site as it meet the ASC HIL D criteria for the analytes tested.

**MBE2017A**

The purpose MBE2017A was to assess the spoil to be generated by the exaction of the "emulsion trench" in the north west corner of Lot 11. The emulsion trench excavation was to extend to approximately 3mbgs. The material tested met the ENM chemical criteria however potential acid sulfate soils were also detected.

MBES were not requested to validate or verify the disposal of the 9,000$m^3$, however MBES were present on site at various times throughout the removal of the soil. Site photos were collected for other purposes. Photograph 1 shows Lot 11 looking north from MW5 (bottom left). Most of surface soil and subsoil had been removed. A small stockpile of the surface soil can be seen in the bottom right corner.



**Photograph 1:** Lot 11 looking north from the southeast corner.

**EHO2020**

EHO Consulting Pty Ltd (EHO) were engaged by Tomago Aluminium Company Ltd (TAC) to undertake a review of a Preliminary Contamination Assessment (PCA) report prepared by JM Environments (JME), (Ref: JME2005-1, 22 April 2020), (Ref.1), for the properties identified as 21D, 21F and 21G School Drive, Tomago NSW 2322. The PCA report was prepared on behalf of Remondis Australia Pty Ltd (Remondis) as part of pre-purchase due diligence carried out as part of the potential sale of the Site to Remondis by TAC. (Note the original version JME20005-2, discussed below, was a cut down version of JME20005-1 to specifically address only Lot 8 and Lot 11.)

EHO scope of works was undertaken as part of the investigation into the potential human health risk posed by the contaminants of potential concern identified at the Site.

EHO installed four temporary groundwater wells by drilling to the watertable and pushing the slotted well casing into the aquifer. It is unknown how deep the wells were pushed into the aquifer. The wells were not sealed with bentonite. The wells were reportedly purged prior to sampling with a dedicated bailer and field filter through a “45” micron filter. In at least one well, GW4, the slotted well casing extended beyond the surface allowing surface water and sediment to enter the well. Eight soil samples were collected from 8 test pits centred around test TP8 reported in JME20005-1 (and JME20005-2, see below).

Soil and groundwater were analysed for eight heavy metals. The soil results were compared to the NEPM ecological commercial industrial trigger values. Human health guidelines were not considered. EHO reported arsenic 6-130mg/kg, copper 8.3-1,100mg/kg, lead 5-2,700mg/kg and zinc 41-22,000mg/kg in the soil samples collected. EHO reported low concentration for the metals tested in groundwater with the exception of zinc. Zinc was reported in concentrations ranging from 13-2,000µg/L.

Despite the concentrations of zinc in soil and groundwater being orders of magnitude of the adopted ecological triggers at some locations, EHO concluded that the risk to on and off site ecological receptors is considered low for exposure to soil, negligible for onsite groundwater receptors and low for offsite groundwater receptors.

EHO2020 sampling locations are shown Figure 3. Significant heavy metal exceedances are shown in Figure 5.

**JME20005-2**

The purpose JME20005-2 was to assess the soil contamination status of Lot 8 and Lot 11 together. JME20005-2 part of the documentation to support Remondis' current development application for the site. Groundwater was not included in the scope of works, however, groundwater monitoring conducted by JME during the Midal operation and was mentioned in JME20005-2 but no assessment of the groundwater was made. JME20005-2 relied on the previous investigations MBE2016, MBE2017 and MBE2017A to assess that the risk of significant soil contamination present on Lot 11 to be low and not warrant further assessment beyond the risk hydrocarbons leaking from a former emulsion pit in the north west corner. Initially, JME excavated two soil bores, one up and one down hydraulic gradient of the former emulsion pit and collected soil samples down to the top of the perceived watertable. JME also excavated 15 test pits into Lot 8 collected and analysed 33 samples for BTEX, TRH, PAH and 8 heavy metals, and nine of these samples were analysed for OCP/PCB and phenols.

A revision of JME20005-2 was conducted after the consideration of potential PFAS contamination in the soil. Four hand augers and a borehole using a truck mounted drill rig were excavated into the saturated zone of the underlying soils. Samples were collected at the surface and 1 and 2mbgs. PFAS was not detected above the limit of reporting in the primary samples. PFAS was detected slightly above the secondary laboratory's limit of reporting in the inter laboratory duplicate.

Heavy metals were detected in several samples in Lot 8, at concentrations which exceeded adopted DGVs. Observed exceedances included:

- Lead exceeded 250% of the adopted HIL in a surface sample collected from TP8;
- Zinc exceeded the adopted EIL in twenty samples from 13 sampling locations and the soil stockpile on Lot 8;
- Copper exceeded the adopted EIL in five samples from along the eastern boundary of the site; and
- Cadmium and arsenic exceeded adopted EILs in surface samples collected from TP5, TP7 and TP8.

JME2005-2 concluded that based on the results and previous assessments, it was considered that the site had been impacted by contamination comprising heavy metals at concentrations exceeding DGVs for commercial/ industrial land use. JME20005-2 considered that the site would meet the environmental requirements for commercial/industrial land use subject to the development and successful implementation of an appropriate Remedial Action Plan (RAP).

JME2005-2 sampling locations are shown Figure 4. Significant heavy metal exceedances are shown in Figure 5.

**JME20005-5**

The purpose of JME2005-2 was to satisfy the request by the NSW EPA for the current groundwater status in order for the NSW EPA to assess the contamination status of the site as part of the determination of Remondis' development application. Previous groundwater monitoring data from the Midal operations were included for consideration which included four years (February 2013- December 2016) of quarterly monitoring data for arsenic, cadmium, copper, lead and zinc which are summarised in Table 2:

TABLE 2: Summary Groundwater Data for Monitoring Wells MW4-MW6, 2013-2016

| | As | Cd | Cu | Pb | Zn |
|---|---|---|---|---|---|
| | µg/L | µg/L | µg/L | µg/L | µg/L |
| | MW4 | | | | |
| Min | <1 | <0.1 | <1 | <1 | 34 |
| Max | 2 | 0.3 | 5 | <1 | 230 |
| Mean | <1 | <0.1 | 2 | <1 | 72 |
| | MW5 | | | | |
| Min | <1 | <0.1 | 1 | <1 | 5 |
| Max | 2 | 0.2 | 5 | 2 | 79 |
| Mean | <1 | <0.1 | 3 | 1 | 42 |
| | MW6 | | | | |
| Min | <1 | <0.1 | <1 | <1 | 5 |
| Max | <1 | 0.4 | 3 | <1 | 11 |
| Mean | <1 | <0.1 | 2 | <1 | 8 |

The maximum zinc concentration of 230µg/L was reached at time where Midal's inground wastewater treatment plant (WWTP) was not meeting the required output quality. The WWTP was decommissioned at the zinc concentrations returned to 66µg/L or less for the remainder of the monitoring period.

JME installed four new groundwater wells, MW7, MW8, MW9 and MW10 and relied on three monitoring wells, MW4, MW5 and MW6, installed by JME (then MBES) as part of the Midal development. Monitoring wells MW4-MW10 were installed with 3m screens placed 2m below the perceived groundwater table and 1 m above. The wells were extended to the surface with casing. The annuli around the screen were filled with 5mm clean sand. The annuli at the top of the screens were sealed with bentonite. The remaining annuli were backfilled with drill cuttings. Two rounds of monitoring were undertaken. The wells were purged, until stabilised, and sampled using a peristaltic pump. Metal samples were filtered through dedicated 0.45µm filters. The monitoring well locations are shown in Figure 8.

The monitoring results for arsenic, cadmium, copper, lead and zinc for monitoring wells MW4-MW6 were within the range of the previous monitoring results. The monitoring results for MW7-MW10 were within the same range with MW10, which was sampled in the second round only, recording a zinc concentration of 220µg/L. MW7 recorded a zinc concentration of 89µg/L and MW8 recorded a zinc concentration of 18µg/L in the first monitoring round only. The remaining monitoring results were for the analysed heavy metals were less than the adopted DGVs.

A number of PFAS compounds, were detected in the groundwater monitoring wells MW4-MW10. PFOA was detected in monitoring wells MW4, MW5, MW7, MW8 and MW10 at concentrations less the adopted human health DGV and the NEMP2.0 99% protection ecological value. PFOA was not detected above the laboratory reporting limit in the upgradient monitoring wells, MW6 and MW9.

PFOS + PFHxS was detected at concentrations less than the adopted human health DGV in monitoring wells MW5, MW6, MW7, MW8, MW9 and MW10. PFOS + PFHxS was detected at concentration less the adopted human health DGV in the first monitoring round and greater than the adopted human health DGV in the second monitoring round in monitoring well MW4. In the upgradient wells MW6 and MW9, concentration were slightly above the limit of reporting.

PFOS was detected above the NEMP2.0 99% protection ecological value in monitoring wells MW4, MW5, MW7, MW8 and MW10 in both groundwater monitoring rounds and in monitoring well MW6 in the second monitoring round. PFOS was not detected above the NEMP2.0 95% protection ecological values in the wells sampled in both monitoring rounds.

The concentrations of PFAS compounds generally decreased from west to east across the site. The source of the PFAS remained unknown, however, the site soil was discounted as being a secondary source in JME20005-2.

The site is within the TAC buffer zone. JME20005-5 reported that fluoride and aluminium concentrations were largest in the upgradient wells and appeared to diminish the further away from TAC the groundwater well was located. Aluminium concentrations were 160 times greater than the adopted trigger value in monitoring well MW9 and 129 greater in monitoring well MW6. On this basis, aluminium was considered to be highest ecological risk to down gradient receptors.

JME20005-5 concluded that the elevated arsenic, cadmium, copper and lead concentrations in soil had not had a significant impact on the site's groundwater. It was noted that zinc was significantly elevated in a monitoring well, MW7, near the site's boundary following a significant rainfall event and was below the DGV in the second monitoring event. The zinc impacted soils with the highest concentrations are associated with the lead impacted soils that are planned to be removed along with the placement of a cap over a portion of site. The cap, in conjunction with a storm water system was intended to reduce stormwater percolation through the soil thereby reducing the metal leaching potential. PFAS concentrations were considered not to be risk to human health and would attenuate as there were no continuing sources.

There was significant difference in metal concentrations, particularly zinc, in groundwater monitoring results reported in EHO2020 and JME20005-5. JME monitoring well MW6 is approximately 15m up hydraulic gradient from EHO monitoring well GW4. Zinc concentrations in MW6 have from 5µg/L to 11µg/L over a number of sampling rounds of a number of years. Zinc concentrations in EHO monitoring well GW4 was reported at 460µg/L. JME monitoring wells MW7 and MW8 were practically bisected by EHO monitoring well GW2. Monitoring wells MW7 and MW8 returned zinc concentrations from <5µg/L to 89µg/L. Zinc concentrations in EHO monitoring well GW2 was reported at 2,000µg/L. It is likely that the well installation and sampling methods utilised by EHO allow contaminated surface soils to:

- Have been "pushed" into the aquifer around the well casing and continue to leach contaminants directly outside the slotted casing;
- enter the well casing via exposed casing slots at the surface;
- be stirred up via sampling with a bailer;
- pass through a 45micron filter; and/or
- be digested by the laboratory as part of the sample.

Any or all these points would reasonably lead to elevated metal concentration.

JME's well installation and sampling methods mitigate such issues by;

- installing the wells via a hollow flight auger and backing filling the annulus with clean 5mm sand;
- finishing the well slots below ground surface and sealing of the 5mm sand with bentonite;
- sampling via low flow techniques to avoid stirring up potential sediments in the well;

- Filtering samples through a 0.45micron filter removing potentially contaminated solids.

On this basis JME's data is considered to be more reliable and will only be used going forward.

# 4 CONCEPTUAL SITE MODEL

A Conceptual Site Model (CSM) was prepared as part of JME20005-2, with reference to the National Environment Protection (Assessment of Site Contamination) Measure (NEPM) Schedule B2, Guideline on Site Characterisation. The CSM identifies potential contaminant sources and COCs, contaminant release mechanisms, exposure pathways and potential receptors. The CSM has been adapted here and is summarised in Table 4 (below).

## 4.1 Site Description

The site was mostly flat and divided into two parts (see Figure 2). The western part of the site (Lot 11) was paved, with the exception of some small gardens on the southern boundary (see Photograph 2). Lot 11 contained two large metal-clad sheds, and some smaller buildings and water tanks. Downpipes from the buildings, and gratings in the car parks and traffic areas in Lot 11, led to an underground stormwater infiltration system.

The eastern part of the site (Lot 8) was unpaved, and sparsely covered with grass and other low vegetation (see Photograph 2). The surface of Lot 8 comprised dark grey sand, with common road base gravel and rock.

Much of eastern portion of the site appeared to have been covered by fill, comprising dark grey to dark brown gravelly sand, to a depth of >1m in parts. White to grey brown sand intersected at the bottom of test pits and boreholes was interpreted as representing in-situ, natural material.

## 4.2 Site History Summary

The site lies on a former sand mine and hence it is likely that the top 3-4m has been disturbed and the heavy minerals been extracted. "Tailing slimes" often have low permeabilities and are enriched in iron. Post sand mining the site was previously part of larger steel fabrication site. Metal cleaning and polishing via sand blasting was common practice for such a land use. Heavy minerals extracted from sand mining such as rutile and ilmenite were used as sandblasting media. From 2012-2013 the western portion of site was redeveloped in the Midal Cables facility. The Midal Cables facility manufactured aluminium transmission cable from molten aluminium sourced from the nearby TAC. During construction the site surface was classified as insitu GSW and ENM by JME. Due to the thickness of the concrete slabs and relatively short life of the facility it is considered very unlikely that the Midal operations impacted on the groundwater quality of the site with the exception of a former septic system in the southern portion of Lot 11 which is no longer in use. This is supported by the groundwater monitoring discussed in Section 1.1.3. The manufacture of aluminium cable from molten metal included the use of an emulsion to lubricate the cable strands during the drawing process. Excess emulsion was capture in an "emulsion trench" and recycled through the process. The emulsion trench was located in the northern Midal building. The trench was constructed of cement below the water table. No groundwater has appeared to have seeped into the disused trench since Midal has shut down and therefore it reasonable assume that emulsion did not leak into the groundwater when Midal was operating.

The site is adjacent to a specialised vehicle manufacturer, and it is considered likely that hydrocarbons, degreasers and PFAS were used.

### 4.1 Site Contamination Status

The soil of Lot 11 has been assessed as suitable for commercial industrial land use.

A localised area of the soil of Lot 8 contained a hotspot of lead contamination that poses a human health risk to on site personnel. There were also exceedances in ecological DGVs for arsenic, cadmium, copper and zinc. Groundwater monitoring indicates that zinc poses a potential risk to offsite ecological receptors and the remainder pose negligible risk to offsite ecological receptors.

Heavy metal soil DGV exceedances are summarised in Table 2 (below).

Concrete beams and concrete-filled tyres had been stockpiled in the northeast part of the site (see Photograph 3, and Figure 2). These are considered to aesthetic contamination requiring management or remediation.

PFAS in soil across the site was assessed in JME2005-2 and no significant concentrations were detected. PFAS compounds were detected in the seven wells that were monitored. PFOS+PFHxS was detected slightly above the adopted human health DGV in the second round of monitoring in monitoring well MW4 but not in the first round of monitoring. PFOA and PFOS+PFHxS were not detected above the adopted human health DGVs in the remaining wells over two monitoring rounds.

PFAS in groundwater poses a low risk to future site users from an incidental ingestion point of view on Lot 11. Lot 11 is fully developed and most of which is fully paved. It is unlikely that the groundwater beneath Lot 11 will be accessed or used for drinking water into the future. The groundwater beneath Lot 8 does not pose a significant risk to human health. The groundwater on Lot 8 may be accessed during the proposed development for the installation of stormwater systems and the like. Although the risk is low, management of contact or incidental ingestion of groundwater should be managed through the construction phase.

JME20005-5 reported that fluoride and aluminium concentrations were largest in the upgradient wells and appeared to diminish the further away from TAC the groundwater well was located. Aluminium concentrations were 160 times greater than the adopted trigger value in monitoring well MW9 and 129 greater in monitoring well MW6. On this basis, aluminium was considered to be highest ecological risk to down gradient receptors.



**Photograph 1:** Paved surface of Lot 11



**Photograph 2:** Sparsely grassed surface of Lot 8



**Photograph 3:** Concrete beams and concrete-filled tyres in Lot 8

TABLE 3: HEAVY METAL DGV EXCEEDANCES REPORTED IN PREVIOUS REPORT REMINING ON SITE

| Analyte | HIL | EIL | JME20005-2 TP1 0 | JME20005-2 TP1 1.6 | JME20005-2 TP2 0.7 | JME20005-2 TP3 0 | JME20005-2 TP5 0 | JME20005-2 TP7 0 | JME20005-2 TP8 0 | JME20005-2 TP9 0.3 | JME20005-2 TP9 0.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 3,000 | 160 | | | | | 900 | 940 | 1,000 | | |
| Cadmium | 900 | 3 | | | | | 4.8 | 3.4 | 5.1 | | |
| Copper | 240,000 | 170 | | | | 680 | 1,700 | 2,100 | 2,400 | | |
| Lead | 1,500 | 2,000 | | | | | | | 4,200 | | |
| Zinc | 400,000 | 480 | 1,300 | 510 | 1,500 | 13,000 | 18,000 | 25,000 | 27,000 | 1,100 | 780 |
| Analyte | HIL | EIL | JME20005-2 TP10 0 | JME20005-2 TP11 0 | JME20005-2 TP11 0.2 | JME20005-2 TP12 0.5 | JME20005-2 TP13 0 | JME20005-2 TP13 0.3 | JME20005-2 TP13 0.5 | JME20005-2 TP14 0.3 | JME20005-2 HA2-1 |
| Arsenic | 3,000 | 160 | | | | | | | | | |
| Cadmium | 900 | 3 | | | | | | | | | |
| Copper | 240,000 | 170 | | | | | | 520 | | | |
| Lead | 1,500 | 2,000 | | | | | | | | | |
| Zinc | 400,000 | 480 | 1,200 | 1,600 | 620 | 900 | 1,200 | 10,000 | 490 | 2,500 | 1,800 |
| Analyte | HIL | EIL | JME20005-2 HA2-2 | JME20005-2 FM1 | JME20005-2 FM2 | JME20005-2 FM3 | EHO2020 TP24 | EHO2020 TP25 | EHO2020 TP27 | EHO2020 TP28 | EHO2020 TP29 |
| Arsenic | 3,000 | 160 | 290 | | | | | | | | |
| Cadmium | 900 | 3 | | | | | | | | | |
| Copper | 240,000 | 170 | | | | | 490 | 340 | 1,100 | 260 | 280 |
| Lead | 1,500 | 2,000 | | | | | | | 2,700 | | |
| Zinc | 400,000 | 480 | | 1.750 | 1,900 | 850 | 12,000 | 8,500 | 22,000 | 6,200 | 8,300 |
| Analyte | HIL | EIL | EHO2020 TP31 | | | | | | | | |
| Arsenic | 3,000 | 160 | | | | | | | | | |
| Cadmium | 900 | 3 | | | | | | | | | |
| Copper | 240,000 | 170 | 460 | | | | | | | | |
| Lead | 1,500 | 2,000 | | | | | | | | | |
| Zinc | 400,000 | 480 | 12,000 | | | | | | | | |

## 4.2 Source Zone Characteristics

### 4.2.1 Primary Contaminant Sources

JME considered potential sources of impact on the site to include:

- Use of the site for manufacture of metal products (potentially including sandblasting operations); and
- Potential importation of uncontrolled fill.

### 4.2.2 Identified Contaminants of Concern

Based on the results of this assessment, COCs on the site were considered to include heavy metals (arsenic, cadmium, copper, lead and zinc).

## 4.3 Areas of Environmental Concern

AECs on the site were considered to include fill across the surface and the groundwater of Lot 8.

## 4.4 Contaminant Transport Mechanisms

Primary transport mechanisms on the site were considered to include:

- Wind transport of fine surface material;
- Surface water flow; and
- Percolation of stormwater through permeable sediments into groundwater, and groundwater migration towards the Hunter River.

## 4.5 Contaminant Exposure Pathways

For contaminated soil to pose a risk to a receptor, a complete exposure pathway must exist between the source of impact and the receptor. A complete exposure pathway consists of the following elements:

- A source and mechanism for release;
- A storage and/or transport medium (e.g. contaminants stored in fine soil types and transported into the atmosphere as dust);
- An exposure point, where the receptor comes in contact with the contamination; and
- An exposure route (e.g. inhalation).

Potential exposure pathways on the site were considered to include:

- Metabolisation by the local ecology;
- Dermal contact, incidental ingestion and inhalation of dust by workers on the site and neighbouring premises; and
- Off-site migration of groundwater potentially impacting hydraulically down-gradient ecology.

## 4.6 Identification of Receptors at Risk

Potential receptors were considered to include:

- Future workers and visitors to the site; and
- Local ecology.

TABLE 4: CONCEPTUAL SITE MODEL 21D and 21F SCHOOL DRIVE TOMAGO

| Known and Potential Primary Sources | Contaminants of Concern | Potentially Impacted Media | Transport Mechanism | Exposure Pathways | Potential Receptors |
|---|---|---|---|---|---|
| Fill used to level site<br>Previous metalworking operations | Arsenic<br>Cadmium<br>Copper<br>Lead<br>Zinc | Soil<br>Air<br>Groundwater and surface water | Surface water<br>Groundwater<br>Wind | Metabolisation<br>Dermal contact<br>Inhalation<br>Ingestion | Ecology<br>Site and neighbouring workers |

### 4.7 Duty to Report

The Contaminated Land Management Act 1997 (CLM Act) establishes a legal framework that gives the EPA powers to require the assessment and remediation of sites where contamination is significant enough to warrant regulation. Where the EPA's intervention is not needed, the NSW planning and development framework will determine the appropriate use of sites in the future.

Under section 60 of the Contaminated Land Management Act 1997 (CLM Act) the following people are required to notify the EPA as soon as practical after they become aware of the contamination:

- anyone whose activities have contaminated land.
- an owner of land that has been contaminated.

For the purposes of section 60(3)(b) of the CLM Act, notification of contamination in, or on, soil on the land is required where:

- the 95 % upper confidence limit on the arithmetic average concentration of a contaminant in or on soil is equal to or above the Health Investigation Level and/or Health Screening Level for that contaminant for the current or approved use of the respective on-site land, as specified in Section 6, Schedule B1 of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013) OR
- the concentration of a contaminant in an individual soil sample is equal to or more than 250% of the Health Investigation Level and/or Health Screening Level for that contaminant for the current or approved use of the respective on-site land, as specified in Section 6, Schedule B1 of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013) AND
- a person has been or foreseeably will be exposed to the contaminant or a by-product of the contaminant.

For the purposes of section 60(3)(a) of the CLM Act, notification of actual or foreseeable contamination of groundwater or surface water on the site is required where:

- the contaminant has entered or will foreseeably enter groundwater or surface water;

AND

- the concentration of the contaminant in the groundwater or surface water is, or will foreseeably be, above the groundwater investigation level for that contaminant as specified in Section 6, Schedule B1 of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013)

AND

- the concentration of the contaminant in the groundwater or surface water will foreseeably continue to remain above the specified concentration.

Remondis are not the current owner the site but intend to purchase site. Remondis has not undertaken contaminating on site. Lead in soil had a UCL95 concentration above the Health Investigation Level for the site. An individual sample contained a lead concentration greater than 250% of the Health Investigation Level. The sample was collected from the surface of site

in close proximity of a proposed truck parking area. However, Remondis intend to remove the lead hot spot from site and therefore it is not foreseeable that an employee will be exposed to the lead hotspot.

The site contains groundwater that is impacted by zinc and PFAS contamination. It is Remondis' intention to remediate the zinc impacted soil and it is expected that the zinc contamination will reduce with time and if it does not contingencies are in place. PFAS had a small exceedance of the adopted Human Health guideline. It has been assessed that is unlikely that there is a continuing PFAS source on site and the PFAS concentrations will reduce with time.

The NSW EPA *Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997* provides the following example of where a person would not be expected to seek advice:

- The site is in use for any purpose.
- The site was previously used for commercial or industrial purposes.
- Site contamination is appropriately contained and disturbance of the cap is subject to:
    - an environmental management plan (EMP) and is carried out in accordance with that plan, or
    - a development consent and is carried out in accordance with that consent, or
    - a site audit statement has been issued certifying that the site is suitable for the current or approved use and no potentially contaminating activities have been carried out at the site since the statement was issued.
- **No duty to report**.

Based on the above considerations and example supplied by the NSW EPA, JME considers there is no duty to report the soil and groundwater contamination to the NSW EPA provided that Remondis continues through the development consent process and the development is carried out in accordance with the consent.

# 5 REMEDIATION OPTIONS

## 5.1 Remedial Objective

The objectives of remediation, where contamination poses unacceptable risks to human health or the environment, are to render the site suitable for its proposed use, and to ensure that the environment is protected.

The objective of the RAP is to determine the most technically appropriate management or remediation strategy that addresses the financial, timing and logistical constraints of the client.

## 5.2 Extent of Remediation Required

Elevated concentrations of arsenic, cadmium and copper in the surface soil of Lot 8 are not considered to pose as significant risk to on and offsite ecological receptors and areas these metals have impacted do not warrant remediation.

Based on two rounds of groundwater monitoring, zinc poses a potential risk to on and offsite ecological receptors, as zinc has also impacted groundwater and can potentially migrate offsite. Zinc contamination was varied and widespread in the soil of Lot 8 and to a lesser extent on Lot 11. Statistical calculations using the data collected in JME20005-2 and EHO2020 indicated that

the zinc UCL95 concentration was 7,740 mg/kg and a mean concentration of 3,600 mg/kg. The highest zinc concentrations were located aJME2005-2 TP3, TP5, TP7, TP8, TP13 and TP14, and EHO2020 TP24, TP25, TP27, TP29 and TP310 and are also in close proximity to each other. Removing these locations from the statistical calculations, the zinc UCL95 concentration was 810mg/kg and a mean concentration of 550 mg/kg. Therefore, it was considered that the remediation of these areas will significantly reduce the amount of zinc that is able to be infiltrated by stormwater.

Lead impact of soil poses a human health risk, particularly to site construction workers. The area of lead contamination is in the vicinity JME2005-2 TP8 and was delineated in EHO2020. The volume of lead impacted soil is relatively small compared the volume of soil impacted by zinc.

The area requiring remediation is shown in Figure 7 and was estimated to be approximately 5,500$m^2$. Contamination is limited to the top 0.5m. Therefore, the volume of soil requiring remediation is approximately 2,750$m^3$. Using a density of 1.8tonnes/$m^3$, the weight of the soil requiring remediation is approximately 4,950 tonnes.

Remediation of the heavy metal in soil should reduce infiltration of heavy metals into the groundwater. Therefore, groundwater specific remediation was considered unnecessary.

## 5.3 Soil Remediation Hierarchy

Schedules A and B of the NEPM provide a preferred hierarchy of options for site clean-up and/or management, which was originally developed in. The hierarchy is outlined as follows:

1. On-site treatment of contamination so that it is destroyed or the associated risk is reduced to an acceptable level.
2. Off-site treatment of excavated soil, so that the contamination is destroyed or the associated risk is reduced to an acceptable level, after which soil is returned to the site.
3. Consolidation and isolation of the soil on site by containment with a properly designed barrier.
4. Removal of contaminated material to an approved site or facility followed, where necessary, by replacement with appropriate material.
5. Where assessment indicates remediation would have no net environmental benefit, or would have a net adverse environmental effect, implementation of an appropriate management strategy.

## 5.4 Review of Soil Remediation Options

JME has not considered a ‘do nothing’ strategy because of the proposal to redevelop the site.

### 5.4.1 Treatment of Contamination

(On-site or off site) treatment of contaminated material was not deemed to be a technically feasible option to destroy heavy metal contamination on the site. Soil washing was considered to be financially prohibitive.

### 5.4.2 Isolation and Containment

On-site capping is used to isolate areas in the subsurface from the surrounding uncontaminated environment. A physical barrier such as a layer of clean soil, synthetic material liners, asphalt, and/or concrete layers may be installed to cap the contaminated material.

Where there is potential for contaminants within the soil to leach to groundwater as a result of surface water infiltration, the cap should be constructed of a low-permeability material such as concrete or compacted clay, which reduces the infiltration of surface water while providing a physical barrier between contaminated soils and the surface of the site.

This option is considered technically feasible on the site. The potential exposure of surface environmental and human populations to the fill material would be removed.

A site management plan is required with any capping strategy. The site management plan identifies the party responsible for adhering to the plan, and includes commitments for ongoing monitoring and maintenance of the cap as well as control of future excavations, which must be minimised or if required, appropriate environmental controls and/or procedures are adopted before work is carried out. Thus, there is an ongoing commitment required to manage the contamination.

### 5.4.3 Excavation and Off-Site Disposal

This method involves the excavation of the areas of contaminated material identified as requiring remediation, and disposal of the material off-site to an appropriately licensed landfill.

To restore site levels following the off-site disposal of contaminated soil, appropriately assessed and validated material may need to be imported to the site.

This option is considered technically feasible for the site. Assuming, on average, the top 0.5m a volume of fill requiring excavation and disposal of 4,950 tonnes and a disposal cost for General Solid Waste (GSW) in the order of $280/tonne, disposal costs could be approximately $1.400,000. This option is not considered financially feasible for the proposed project but may be suitable to remediate limited contamination hot spots on the site.

# 6 RECOMMENDED REMEDIAL ACTION PLAN

## 6.1 Pre-Remediation Groundwater Monitoring

The remediation activities recommended below are dependent on the results of the two rounds of groundwater monitoring reported in JME20005-5. The first round of monitoring was undertaken following several weeks of steady and at times heavy rain. In order to get a better understanding of the groundwater contamination status beneath the site, it is recommended that the groundwater is monitored on a monthly basis until the remediation activities commence. The groundwater should be monitored for groundwater depth, pH, dissolved oxygen, electrical conductivity, redox potential, arsenic, cadmium, chromium, copper, lead, zinc and PFAS compounds.

### 6.2 Remediation Strategy

Remondis has indicated to JME that they plan to use Lot 8 for vehicle parking, as shown in Figure 6. This would necessitate the importation of road base material to form a suitable surface for these activities.

Accordingly, JME recommends a combination of removal of the lead in soil hotspot and, consolidation and capping of the significant zinc impacted soil.

Specifically, the remedial strategy will comprise the following:

- Removal and offsite disposal of anthropogenic waste from the northern end of Lot 8;
- Removal and offsite disposal of the lead impacted hotspot located at TP8.
- Clear and grub the proposed truck parking area;
- Level and fill the surface of the truck parking area;
- Placement of a marker layer ;
- Construction of the cap; and
- Installation of stormwater drainage system.

Since the remedial plan does not remove all the contamination from the site, there is an ongoing commitment required to manage the contamination remaining on site. This commitment will be addressed via a Long Term Environmental Management Plan (LTEMP), as discussed in Section 10.

### 6.3 Rationale

(On-site or off-site) treatment of contaminated material was not deemed to be a technically feasible option to destroy heavy metal contamination on the site.

The estimated cost of disposal of fill requiring remediation on the site was considered prohibitive. However, the removal and offsite disposal of the lead impacted soil that poses a human health risk was considered not to be cost prohibitive.

A low-permeability cap is considered to be an appropriate remediation method for heavy metal, contamination of the site. A cap would be intended to reduce stormwater infiltration through the significant zinc impacted soils and into the groundwater. A low-permeability cap of compacted road base material would inhibit the infiltration of rainwater, combined with an underground stormwater drainage system, and would limit the amount of water percolating through contaminated soils, and reduce the potential for groundwater to be contaminated (groundwater was observed beneath the site at depths greater than the extent of contaminated fill).

As the capping layer would be achieved via the construction of a parking surface pad, there would be limited additional groundwater specific remediation measures required.

### 6.4 Removal of Anthropogenic Waste

Stockpiled concrete beams, concrete-filled tyres and other anthropogenic material will be removed from the surface of the site, addressing the current aesthetic impact on the site.

### 6.5 Removal of Lead Impacted Fill

The lead impacted soil will be excavated starting from TP8 and extending laterally until the black sandy material had been removed. The excavated material will be stockpiled, waste classified and disposed of at a facility licences to accept the waste.

The validation for the removal of lead impacted soil from the excavation is described in section 7.1.

The excavation will be backed filled with validated site soil, see section 7.2, or imported soils, see section 7.4.

### 6.6 Preparation of the Capped Area

The truck parking area will be cleared and grubbed. If geotechnically suitable, the fill stockpile near the northeast corner of site will be used to level the tuck parking area. If it is not geotechnically suitable it will be waste classified and removed from site. Surface soils from around test pits TP13, TP14, TP25 and TP31will be used to raise the surface to the design level of the underside of the marker layer.

The validation for the removal of zinc impacted soil from the excavation(s) is described in section 7.1.

The excavation(s) will be backed filled with validated site soil, see section 7.2, or imported soils, see section 7.4.

Excess spoil generated from excavating zinc impacted soils, that are superfluous to the filling needs of the capped area, will be validated or waste classified and removed from site, see section 7.2.

### 6.7 Marker Layer

Prior to capping, the site's surface will be graded, and any sharp/rough objects protruding from the surface removed. An impermeable geotextile membrane will be installed to provide geotechnical support for the road base as well as to act as a visual marker for potential future excavations.

### 6.8 Construction of the Cap

The primary use of the cap is to park heavy vehicles up on it. It must be design by a suitably qualified engineer to ensure that the design is robust enough to endure heavy vehicle movements. The primary remediation aim of the cap is to reduce the infiltration of storm water through zinc impacted soil. The vertical hydraulic conductivity (infiltration rate) is generally assumed to be one tenth of the hydraulic conductivity. JME20005-5 estimated the site's hydraulic conductivity to be approximately $7.4x10^{-5}$m/s – $9.5x10^{-5}$ m/s and hence the sites infiltration rate is approximately $1x10^{-6}$ m/s. In order to reduce the volume of water through the zinc impacted soils, the cap must have the following specifications.

- A low leachability of heavy metals;
- Underlain by an impermeable geotextile;
- A maximum permeability of $1x10^{-7}$ m/s;
- A minimum grade of 1% to the stormwater drain;
- No ponding of stormwater;
- Stormwater is to directed to a subsurface infiltration pit; and
- The subsurface stormwater infiltration zones must more than 0.5mbgs;

If the capping material is a soil it must satisfy:

- The NSW EPA ENM exemption/order; or

- The definition of virgin excavated natural material (VENM) as per the NSW EPA Waste Classification Guidelines Part 1: Classifying Waste;
- A current appropriate specific or general NSW EPA exemption/order for other material; or
- Be a product generated from freshly quarried material.

# 7 VALIDATION OF REMEDIATION

## 7.1 Validation of Excavations

In order to validate hot spot excavations, sampling will be undertaken according to the following protocols:

- Excavations will be visually assessed to confirm that potentially contaminated soil has been removed to the extent practical;
- Validation soil samples will be taken at a ratio of 1 sample per 64m2. Where applicable, soil samples will be collected from the batter of the excavation at a rate of 1 sample per 10 lineal metres;
- Samples will be collected using hand tools;
- A clean pair of disposable gloves will be worn when collecting each sample; and
- Samples will be kept chilled while in the field and in transit to the laboratory.

A hot spot excavation will be considered remediated if the UCL95 value of validation analytical results for:

- Lead is less than 1,200 mg/kg; and
- Zinc is less than 810 mg/kg.

A minimum of ten samples is required to utilise the UCL95 calculation.

## 7.2 Validation/Classification of Stockpiles

Stockpiles of excavated material will be sampled and analysed in order to provide an assessment of contamination within the stockpiles. Analytical results will be compared against trigger levels as set out in Table 3, to assess their suitability to be re-emplaced on site.

Those stockpiles not suitable for on-site re-use will be classified according to the NSW Environment Protection Authority (2014) Waste Classification Guidelines Part 1: Classifying Waste, and disposed of off-site at a suitably licensed landfill facility (or facilities).

In order to validate stockpiles of excavated material, the following protocols will be followed:

- Stockpile samples will be collected as per Table 5;
- Samples will be collected using hand tools such as a trowel or hand auger. An excavator may also be used to collect stockpile samples;
- Samples will be collected at different depths and locations within the stockpile in order to provide adequate representation of the stockpile's contamination status;
- Where hand tools are used, they will be decontaminated between samples by rinsing with phosphate-free detergent and potable water;
- Where an excavator is used to collect stockpile samples, samples will be taken from the centre of the excavator bucket load in order to minimise the potential for cross-contamination;

- A clean pair of disposable gloves will be worn when collecting each sample; and
- Samples will be kept chilled while in the field and in transit to the laboratory.

TABLE 5 - SAMPLING OF STOCKPILED MATERIAL*

| Stockpile Volume ($m^3$) | Number of Samples |
|---|---|
| <75 | 3 |
| 75 - <100 | 4 |
| 100 - <125 | 5 |
| 125 - <150 | 6 |
| 150 - <175 | 7 |
| 175 - <200 | 8 |

*From Section 7.5.2 NEPM Schedule B2 Guideline on Site Characterisation

### 7.3 Validation of Placement of Marker Layer

Prior to emplacing imported road base material, JME will collect a photographic record of the geofabric marker layer. The photographic record and a survey record of the location of the marker layer will be included in the Validation Report.

### 7.4 Validation of Imported Soils

Classification documents and trucking receipts for imported material will be included in the Validation Report.

A survey record of placed imported soils, to demonstrate a minimum thickness of 0.5m, will be included in the Validation Report.

### 7.5 Post Remediation Activities

Following the completion of the proposed remediation, ongoing groundwater monitoring will be required to demonstrate the ongoing effectiveness of the remediation and attenuation of PFAS compounds in the groundwater. The groundwater monitoring should be undertaken on the monthly basis for the first twelve months after the completion of the remediation at which time the scheduling of the groundwater monitoring events can be reviewed.

The groundwater should be monitored for groundwater depth, pH, dissolved oxygen, electrical conductivity, redox potential, arsenic, cadmium, chromium, copper, lead, zinc and PFAS compounds.

A photographic record of the performance of the cap will be collected during groundwater monitoring events to assess if the cap requires repairs and maintenance.

A report detailing the groundwater monitoring activities, observed trends of the groundwater contamination and the photographic will be presented to Remondis.

## 8 SITE MANAGEMENT PLAN DURING REMEDIATION

Remediation works have the potential to cause environmental or human health issues during the importation and emplacement of soils, and associated earthworks. The works will be conducted under a Construction Environmental Management Plan (CEMP), which will include consideration of the following measures in order to reduce these risks.

- Site access;
- Hours of operation;
- Stormwater and soil management;
- Trafficking of soil off-site;
- Noise control;
- Dust control and monitoring;
- Odour control;
- WHS;
- Remediation schedule; and
- Other issues to be addressed.

### 8.1 Site Access

The site will be fenced, and adequate fences or barriers will be placed around excavations and stockpiles to prevent access of unauthorised personnel. Adequate warning signs will also be placed around the area.

### 8.2 Hours of Operations

Remediation hours of operations will be limited to the hours of general site works as stipulated in the Development Application consent.

### 8.3 Stormwater and Soil Management

Adequate stormwater runoff, run-on and sediment control measures will be put in place for the remedial works.

The following recommendations provide guidance on managing stockpiled material:

- Stockpiles should be managed in such a way as to prevent harm to the environment and general public from potentially contaminated soils within the stockpiles;
- Stockpiles should be placed on level ground. If this is not possible, stockpiles should not be placed on slopes greater than 5°;
- Material should not be stockpiled more than 2m high;
- Once soils have been stockpiled, the stockpiles should be covered by weighted polythene sheets or tarpaulins to prevent erosion of stockpiled materials. Heavy objects not containing sharp edges should be placed on the sheets to prevent them from being blown by wind;
- Adequate straw bales and/or silt fences should be placed around the perimeter of the stockpile areas to filter runoff from the stockpiles and prevent overland stormwater flow from affecting the base of the stockpile; and
- Tightly packed sand bags should be placed up-gradient of the stockpile to prevent stormwater from running into the stockpile.

### 8.4 Trafficking of Soil

In order to reduce the risk of soil being transported off site by vehicle movement, the following protocols should be observed:

- Vehicles should be parked on hard stand areas, rather than exposed soil;
- Visual inspection of vehicles for loose soil should be undertaken prior to leaving site;

- If necessary, vehicles should be cleaned to remove loose soil before leaving site; and
- Grids should be placed at exit points to help remove soil from vehicles.

### 8.5 Noise

To mitigate noise impacts which may arise as a result of remedial works, the civil contractor will undertake the works in accordance with state and local noise regulations applicable to the site.

### 8.6 Dust Control

Dust control is required to prevent airborne dust being inhaled by human receptors. Airborne dust may be generated by wind action from loose earth left on the ground. This could cause migration of contaminated dust, as well as causing a nuisance for the surrounding area, and must be controlled.

Therefore, the following dust control measures are proposed:

- Dust levels will be monitored visually during site work; and
- Soil will be kept adequately moist to reduce the generation of dust.

### 8.7 Odour

The remediation works are not expected to generate any significant odours.

### 8.8 Workplace Health and Safety

A health, safety, security and environmental (HSSE) plan should be prepared by the remediation contractor, in accordance with relevant NSW legislation.

The HSSE plan should include, but not be limited to, the following.

- Hazard identification and control;
- Dust and odour monitoring during excavation and stockpiling works;
- Handling procedures;
- Personal protective equipment (PPE);
- Work zones;
- Contingency plans; and
- Incident reporting.

The HSSE plan should be periodically reviewed and updated prior to the various project tasks being conducted.

The contractor, supporting sub-contractors, and third party observers to the site will be required to work strictly to the plan. During site activities, only approved personnel should be allowed access to the remediation work area.

The HSSE plan will identify hazards, assess the risks posed by the hazards, and recommend measures to control the hazards.

#### 8.8.1 Summary of Contamination and Exposure Pathways

Exposure of site users to contaminants could occur through:

- Dermal contact with contaminated soil;
- Ingestion of contaminated soil; and

- Inhalation of contaminated dust.

#### 8.8.2 Health and Safety Control Measures for Contamination Hazards

The following section presents some control measures that should be adopted to manage health and safety hazards posed by contamination during the remediation. These control measures include:

- Site access restrictions;
- PPE; and
- Safe work practices.

It is important to note that these procedures will need to be evaluated for effectiveness, and where necessary revised and/or improved during site work.

### 8.9 Personal Protective Equipment

To minimise short and long term health risks associated with working on a construction site, and with potential exposure to contaminants, the minimum level of PPE required for persons undertaking the excavations includes:

- Hard hat;
- High visibility clothing;
- Long sleeved shirt and trousers;
- Steel capped work boots;
- Safety glasses; and
- Chemical resistant rubber gloves (for persons coming in contact with contaminated soil).

**Safe Working Practices**

The contractor should ensure that adequate signage is present across the remediation area to warn unauthorised persons from entering the area.

Eating, drinking, chewing gum or tobacco, smoking or practices that involve hand to mouth transfer increases the probability of ingestion of contaminated soil or dust into the body. With respect to remediation activities, hands must be thoroughly washed after coming into contact with soil or groundwater on the site before eating, drinking or smoking.

Smoking will be prohibited in the remediation area.

### 8.10 Remediation Schedule

Under the proposed remediation strategy, a low-permeability cap and stormwater drainage system will be installed as part of the construction works for the proposed redevelopment. Timing of the remedial works will therefore be dependent on the construction schedule.

# 9 LEGISLATIVE AND REGULATORY FRAMEWORK

This section provides a summary of current legislation and regulations applicable to the RAP.

## 9.1 Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 ('EP&A Act') regulates development in NSW, and incorporates the principles of ecologically sustainable development through the EP&A Regulation 2000.

### 9.1.1 Changes to the Act

Part 3A of the EP&A Act was repealed and replaced by the Environmental Planning and Assessment Amendment (Part 3A Repeal) Act 2011. The complementary planning policy has also been revised to the State Environmental Planning Policy (State and Regional Development) 2011.

In accordance with Schedule 1 of the State Environmental Planning Policy (State and Regional Development) 2011, Remediation of Contaminated Land is considered State Significant Development if it is classified as Category 1 Remediation Work on 'significantly contaminated land' and remediation is required under the Contaminated Land Management Act ('CLM Act').

### 9.1.2 State Environmental Planning Policy 55 – Remediation of Land

State Environmental Planning Policy 55 – Remediation of Land (SEPP 55) under the EP&A Act provides a framework for contaminated land remediation. Remediation work which requires development consent is known as Category 1 work. Category 1 refers to work:

- Designated development; or
- Carried out or to be carried out on land declared to be a critical habitat; or
- Likely to have a significant effect on a critical habitat or a threatened species, population or ecological community; or
- Development for which another State environmental planning policy or a regional environmental plan requires development consent; or
- Carried out or to be carried out in an area or zone to which any classifications to the following effect apply under an environmental planning instrument:

  (i) coastal protection;
  (ii) conservation or heritage conservation;
  (iii) habitat area, habitat protection area, habitat or wildlife corridor;
  (iv) environment protection;
  (v) escarpment, escarpment protection or escarpment preservation;
  (vi) floodway;
  (vii) littoral rainforest;
  (viii) nature reserve;
  (ix) scenic area or scenic protection;
  (x) wetland; or
  (xi) carried out or to be carried out on any land in a manner that does not comply with a policy made under the contaminated land planning guidelines by the council for any local government area in which the land is situated (or if the land is within the unincorporated area, the Western Lands Commissioner).

All other remediation work is classified as Category 2 work and may be carried out without development consent. The local council must be notified at least 30 days prior to the commencement of Category 2 remedial works.

This remediation is classified as Category 2 remedial works.

## 9.2 Protection of the Environment Operations Act 1997

Under Section 48 of the Protection of the Environment Operations Act 1997 ('POEO Act'), an Environment Protection Licence is required if the activity undertaken is listed in Schedule 1. The POEO Act also defines 'waste' for regulatory purposes.

### 9.2.1 Contaminated Soil Treatment

Contaminated soil treatment is declared to be a scheduled activity requiring a licence if:

- In any case, it has the capacity to treat more than 1,000 cubic metres per year of contaminated soil received from off-site; or
- Where it treats contaminated soil originating exclusively on-site, it has a capacity:

  (i) to incinerate more than 1,000 cubic metres per year of contaminated soil; or
  (ii) to treat (otherwise than by incineration) and store more than 30,000 cubic metres of contaminated soil; or
  (iii) to disturb more than an aggregate area of 3 hectares of contaminated soil.

As no contaminated soil is proposed to be received from off-site, less than 30,000 $m^3$ of contaminated soil is proposed to be stored at the site, and less than 3 hectares of contaminated soil will be disturbed, the remedial works are not considered to be a scheduled activity under the Act, and do not require a licence.

### 9.2.2 POEO Act Requirements

Impacted soil requiring off-site disposal (should this be required) will be classified, transported and disposed of to a licensed landfill.

If friable asbestos is encountered on site, the presence of a person holding a Class A asbestos removal licence will be required.

If non-friable asbestos is encountered on site, the presence of a person holding a Class B asbestos removal licence will be required.

Material entering/leaving the site will be tracked and documented. Documentation will be included in the site validation report.

## 9.3 Contaminated Land Management Act 1997

The NSW CLM Act establishes a process for the investigation and remediation of land that is contaminated, where the contamination is considered significant enough to warrant regulation.

Under Section 60 of the CLM Act, a person whose activities have contaminated land, or a landowner whose land has been contaminated, is required to notify the NSW EPA when they become aware of the contamination. Notification is required where:

- Soil concentration trigger levels are exceeded and a person either has been, or foreseeably will be, exposed to the contaminant or a by-product of the contaminant; or
- The contaminant will foreseeably enter neighbouring land; or
- The contaminant has entered or will foreseeably enter groundwater or surface water.

As described in this RAP, contaminants have been detected on the site at concentrations that exceed adopted guideline values. JME considers that there is potential for a person to be exposed to the contaminants and that the site owner therefore potentially has a duty to notify

the EPA of the site's status as a contaminated site. JME recommends obtaining legal advice regarding reporting the site as potentially requiring regulation under Section 60 of the CLM Act.

### 9.4 Waste Classification Guidelines

Classification of excavated material (should this be required) will be undertaken according to the NSW EPA Waste Classification Guidelines Part 1: Classifying Waste (2014). The following considerations should be reviewed prior to the re-instatement or disposal of stockpiled material:

- Is the waste special (asbestos) waste?
- Does the waste classify as:
    - General solid waste?
    - Restricted solid waste? or
    - Hazardous waste?

If necessary, waste should be disposed of at an appropriately licensed landfill facility. Transport of waste should be limited by selecting the nearest appropriate facility. In this case the two likely disposal landfills are Newcastle City Council Summerhill Waste Management Centre on Minmi Road, Wallsend, and Suez Landfill at Newline Road, Raymond Terrace.

## 10 LONG TERM ENVIRONMENTAL MANAGEMENT PLAN

As the remedial goal does not aim to fully remediate the site, contamination remaining will be managed under an LTEMP. The LTEMP will:

- Satisfy the requirements for a capping and containment strategy outlined in the NSW EPA Guidelines for the NSW Site Auditors Scheme (3rd Edition);
- Be produced following the validation report, when the final contamination status of the site is known; and
- Manage the fill remaining beneath the surface of the site, and the potential exposure of future site workers and the ecology to heavy metal contamination within the fill.

The LTEMP will include:

- The objectives of the LTEMP;
- The party responsible for adhering to the plan;
- A description of the fill encapsulated at the site, and characterisation of the contamination;
- A survey plan showing the location of buried fill;
- Record of cap thickness across the site;
- Commitments for ongoing groundwater monitoring and maintenance of the cap;
- A procedure to excavate the site (if necessary). Future excavations must be minimised or if required, have appropriate environmental controls and/or procedures adopted before work is carried out;
- The requirement for the site's Section 10.7 certificate to be updated to record the site's contamination status;
- Management measures for the restriction of use of groundwater;
- Management measures to mitigate exposure pathways to future site users; and
- Details of periodic reviews and monitoring (as required)

# 11 CONTACTS

The following provisional contact numbers for project personnel are given for the duration of the project. The contact names will be displayed on a sign during the remediation process.

In the event that project personnel change, relevant parties will be notified.

TABLE 6: PROJECT PERSONNEL CONTACT NUMBERS

| |
|---|
| Environmental Consultant/Project Manager<br>**James McMahon**<br>JM Environments<br>Mobile: 0427 893 668<br>email: james@jmenvironments.com |
| Client Contact<br>**TBA** |

# 12 CONTINGENCY PLAN

A contingency plan is outlined in Table 7, listing potential events that may arise during the field work and actions that will be undertaken if unexpected conditions occur.

TABLE 7: CONTINGENCY PLAN

| Unexpected Condition | Action |
|---|---|
| Identification of uncontained contaminated materials such as tar during earthworks. | Stop work in that area.<br>Demarcate an exclusion zone around the area.<br>Contact JME as soon as practicable.<br>Stockpile material on a bunded plastic lined pad<br>Excavation of the material should continue until it has been visually removed.<br>Waste classify and remove from site.<br>Additional samples and analytes may be required to be collected and analysed for (depending on the nature of the material). |
| Identification of contained contaminated materials such as drums during earthworks. | Stop work in that area.<br>Demarcate an exclusion zone around the area.<br>Contact JME as soon as practicable.<br>Check for damage or leaks from drums.<br>Carefully remove and store drums on a bunded plastic lined pad.<br>If drums cannot be moved without causing further leaks or spills they shall remain in-situ until they are pumped out.<br>Excavation of the material should continue until leaks or spills have been visually removed.<br>Waste classify and remove from site.<br>Additional samples and analytes may be required to be collected and analysed for (depending on the nature of the material). |
| Groundwater contamination does not self-attenuate | Assess the performance of the cap<br>Replace the road base capping layer with a two coat seal or concrete hardstand.<br>Continue groundwater monitoring. |

# 13 CONCLUSIONS

It is proposed to remediate the eastern part of the site (Lot 8) via a combination of excavation and removal of the lead impacted soil and a cap and contain strategy for zinc impacted soils. It is considered this strategy will remove a potential exposure pathway between contaminated fill and surface ecological and human receptors, as well as reducing the potential for groundwater contamination.

It is considered that existing asphalt and concrete pavements over the site's western part (Lot 11) already provide an effective barrier between contaminated soil, if present, and potential receptors.

JME considers that the site may be considered suitable for its proposed redevelopment and ongoing industrial land use, pending successful implementation of remedial measures as detailed in this RAP, and the preparation and implementation of an LTEMP.

# REFERENCES

MB Engineering Solutions Pty Ltd (2013) Excavated Natural Material Assessment Lot 11 McIntyre Rd, Tomago (ref: MBE2017)

MB Engineering Solutions Pty Ltd (2013) Excavated Natural Material Assessment Addendum Lot 11 McIntyre Rd, Tomago (ref: MBE2017)

MB Engineering Solutions Pty Ltd (2013) Excavated Natural Material Assessment Lot 11 McIntyre Rd, Tomago (ref: MBE2017)

MB Engineering Solutions Pty Ltd (2013) Excavated Natural Material Assessment Addendum Lot 11 McIntyre Rd, Tomago (ref: MBE2017)

National Environment Protection (Assessment of Site Contamination) Measure (1999, updated 2013) Schedule B2, Guideline on Site Characterisation

NSW Contaminated Land Management Act (1997)

NSW Environmental Planning and Assessment Act (1979)

NSW Environment Protection Authority (1995) Sampling Design Guidelines

NSW Environment Protection Authority (2014) The excavated natural material exemption

NSW Environment Protection Authority (2014) The excavated natural material order

NSW Environment Protection Authority (2014) Waste Classification Guidelines Part 1: Classifying Waste

NSW Environment Protection Authority (2015) Guidelines on the Duty to Report Contamination under the Contaminated Land management Act (1997)

NSW Environment Protection Authority (2017) Guidelines for the NSW Site Auditor Scheme (3rd Edition) Contaminated Sites

NSW Environment Protection Authority (2020) Guidelines for Consultants reporting on contaminated land

NSW Protection of the Environment Operations Act (1997)

NSW State Environmental Planning Policy (State and Regional Development) 55 – Remediation of Land (2011)

Google Earth

maps.six.gov.nsw.au

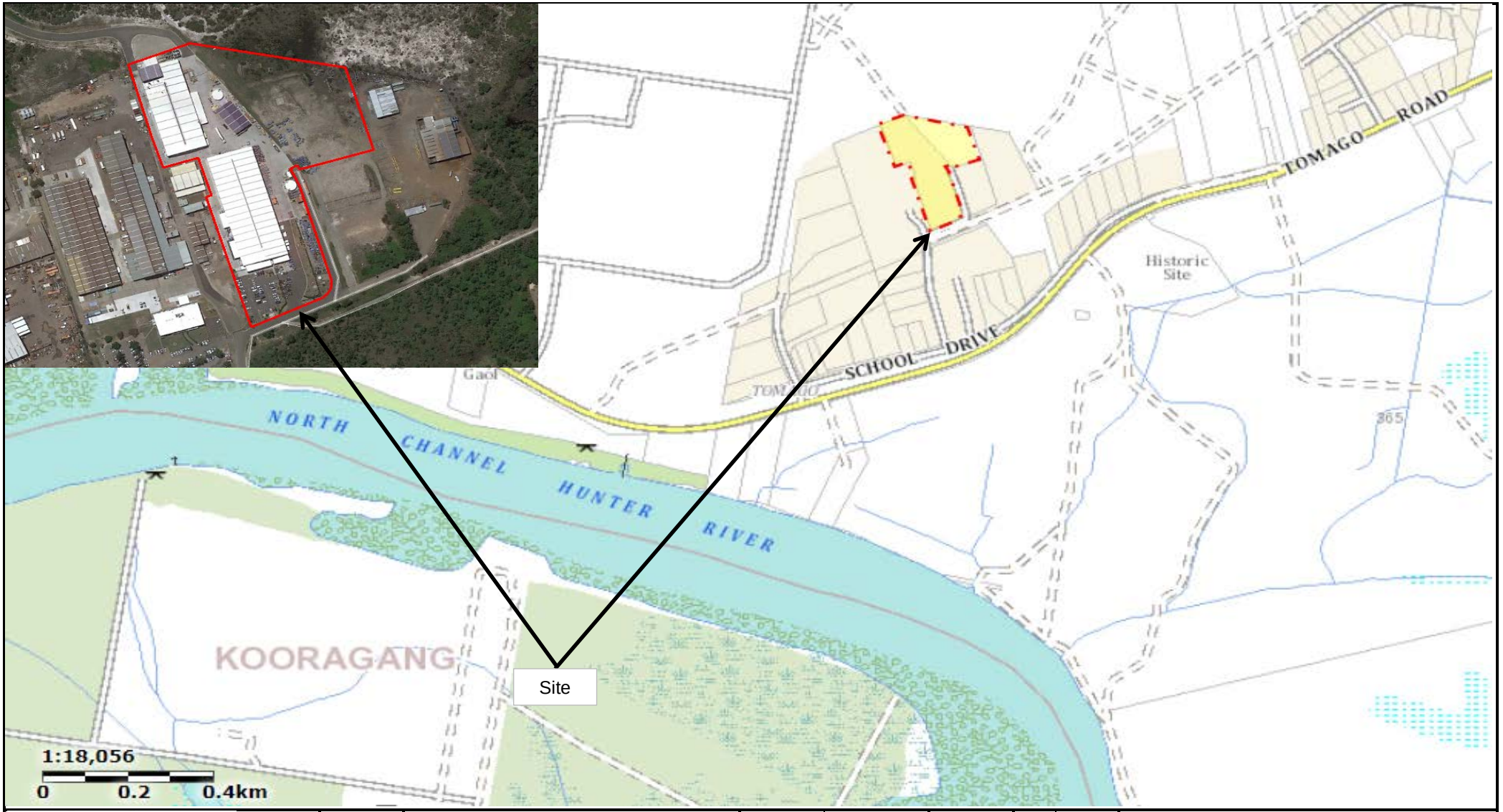
# LIMITATIONS

This Remedial Action Plan was prepared for Remondis Pty Ltd, with the objective of remediating contamination on the site that could impact on its suitability for redevelopment and ongoing industrial land use. This report is not intended for other parties or other uses, with the exception of Port Stephens Council for the purpose of assessing a Development Application. No warranty, expressed or implied, is made as to the information and professional advice included in this report. Anyone using this document does so at their own risk, and should satisfy themselves concerning its applicability and, where necessary, should seek expert advice in relation to the particular situation at the time.

The findings contained within this report are the result of discrete/specific sampling practices, used in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general conditions of the site. Under no circumstances, however, can it be considered that these findings represent the actual state of the site at all points. It is the nature of contaminated site investigations that the degree of variability in site conditions cannot be known completely, and no sampling and analysis program can eliminate all uncertainty concerning the condition of the site. Professional judgement must be exercised in the collection and interpretation of data.

This report does not comprise a geotechnical assessment and should not be used for geotechnical purposes.

# Figures




| | | | | | | |
|---|---|---|---|---|---|---|
| ENVIRONMENTS | CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | FIGURE TITLE: |
| | | DWG #: | 1 | DRAWN: | JH | **Site Location Plan** |
| | | REVISION: | 1 | | | |
| | PROJECT TITLE: **School Drive, Tomago** | SCALE: | As shown | STATUS: | NFC | |
| | | DATE: | 5/06/2020 | | | FIGURE NUMBER: **1** |




| | | | | | |
|---|---|---|---|---|---|
| CLIENT: **Remondis** | | PROJECT: JME20005 | DESIGNED: JMc | | FIGURE TITLE **Site Features** |
| | | DWG #: 1 | DRAWN: JH | | |
| | | REVISION: 1 | | | |
| PROJECT TITLE: **School Drive, Tomago** | | SCALE: As shown | STATUS: | | FIGURE: **2** |
| | | DATE: 5/06/2020 | | | |

JM ENVIRONMENTS




ENVIRONMENTS

CLIENT: **Remondis**

PROJECT TITLE: **School Drive, Tomago**

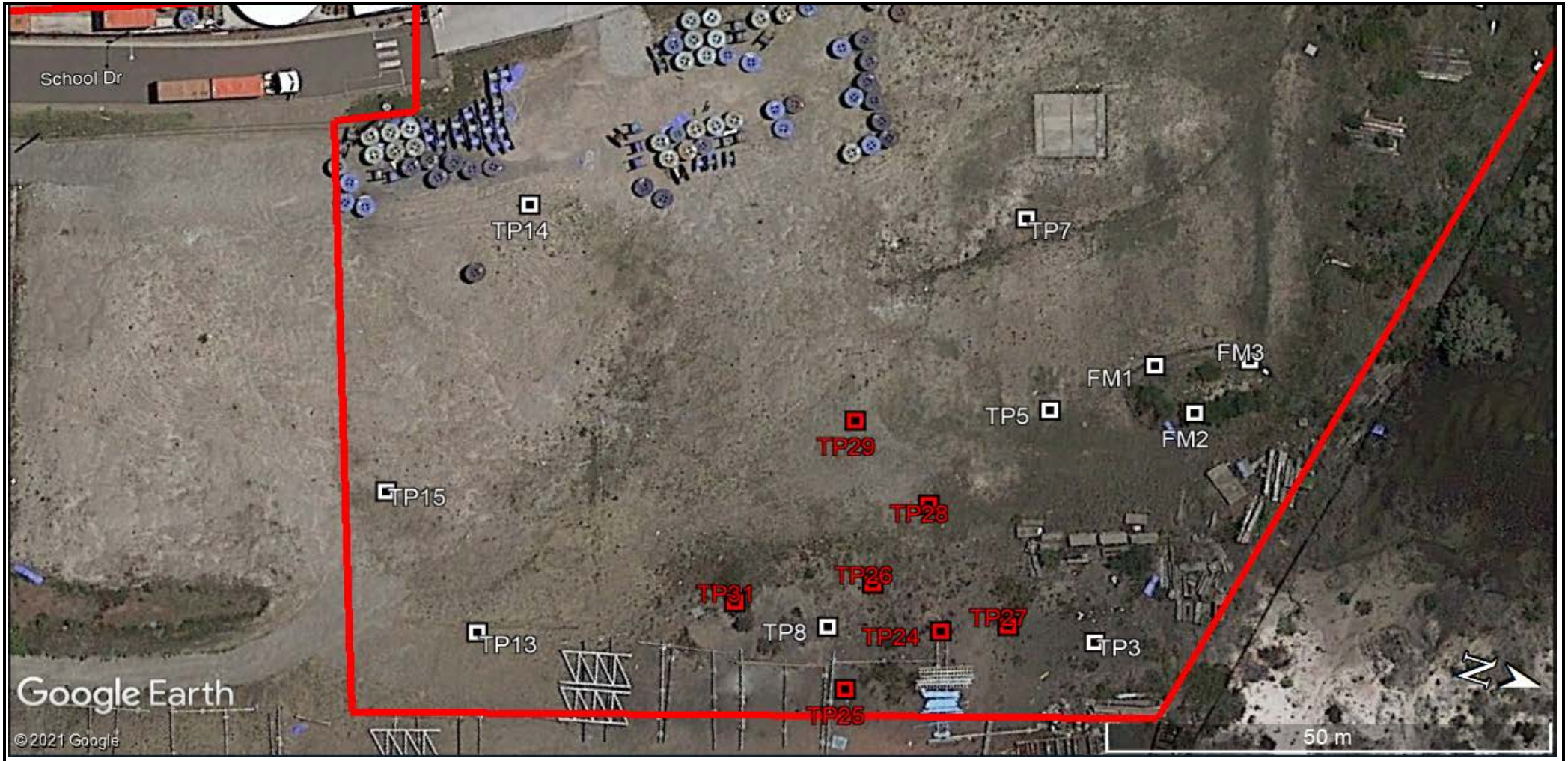
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|---|---|---|---|---|
| PROJECT: | JME20005 | DESIGNED: | JMc | |
| DWG #: | 1 | DRAWN: | JH | |
| REVISION: | 1 | STATUS: | NFC | |
| SCALE: | As shown | | | |
| DATE: | 5/07/2021 | | | |

FIGURE TITLE: **EHO2020 Sampling Locations**

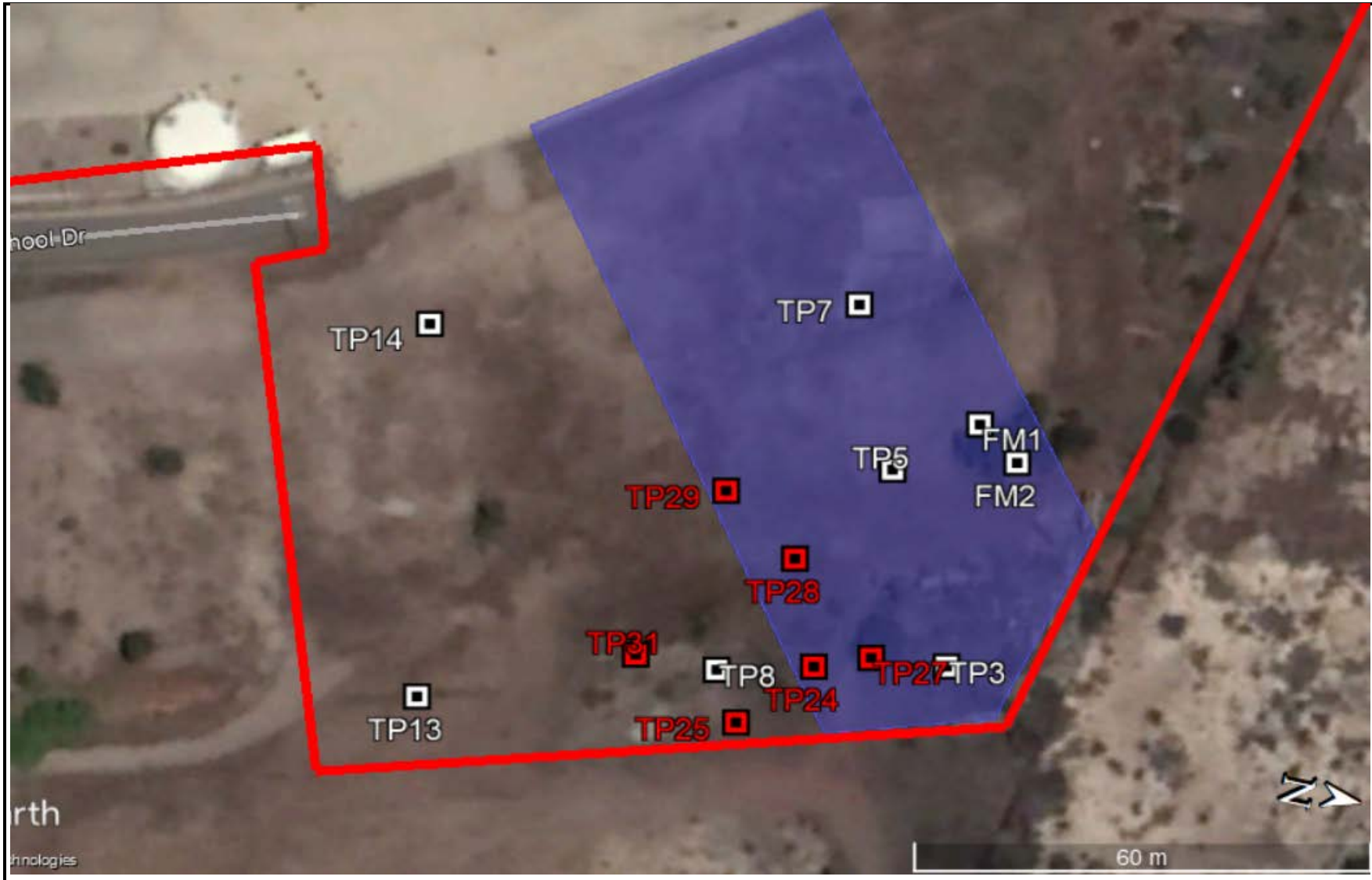
FIGURE NUMBER: **3**




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ENVIRONMENTS | N | CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | FIGURE TITLE: |
| | | | DWG #: | 1 | DRAWN: | JMc | **JME20005-2 Sampling Locations** |
| | | | REVISION: | 1 | STATUS: | NFC | **Insert Fill Stockpile Sa,pling Locations** |
| | | PROJECT TITLE: **School Drive, Tomago** | SCALE: | As shown | | | |
| | | | DATE: | 5/07/2021 | | | FIGURE NUMBER: **4** |




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ENVIRONMENTS | N | CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | FIGURE TITLE: |
| | | | DWG #: | 1 | DRAWN: | JH | **Locations with zinc concentrations exceeding 2,500 mg/kg** |
| | | | REVISION: | 1 | | | |
| | | PROJECT TITLE: **School Drive, Tomago** | SCALE: | As shown | STATUS: | NFC | |
| | | | DATE: | 5/06/2020 | | | FIGURE NUMBER: **5** |




ENVIRONMENTS

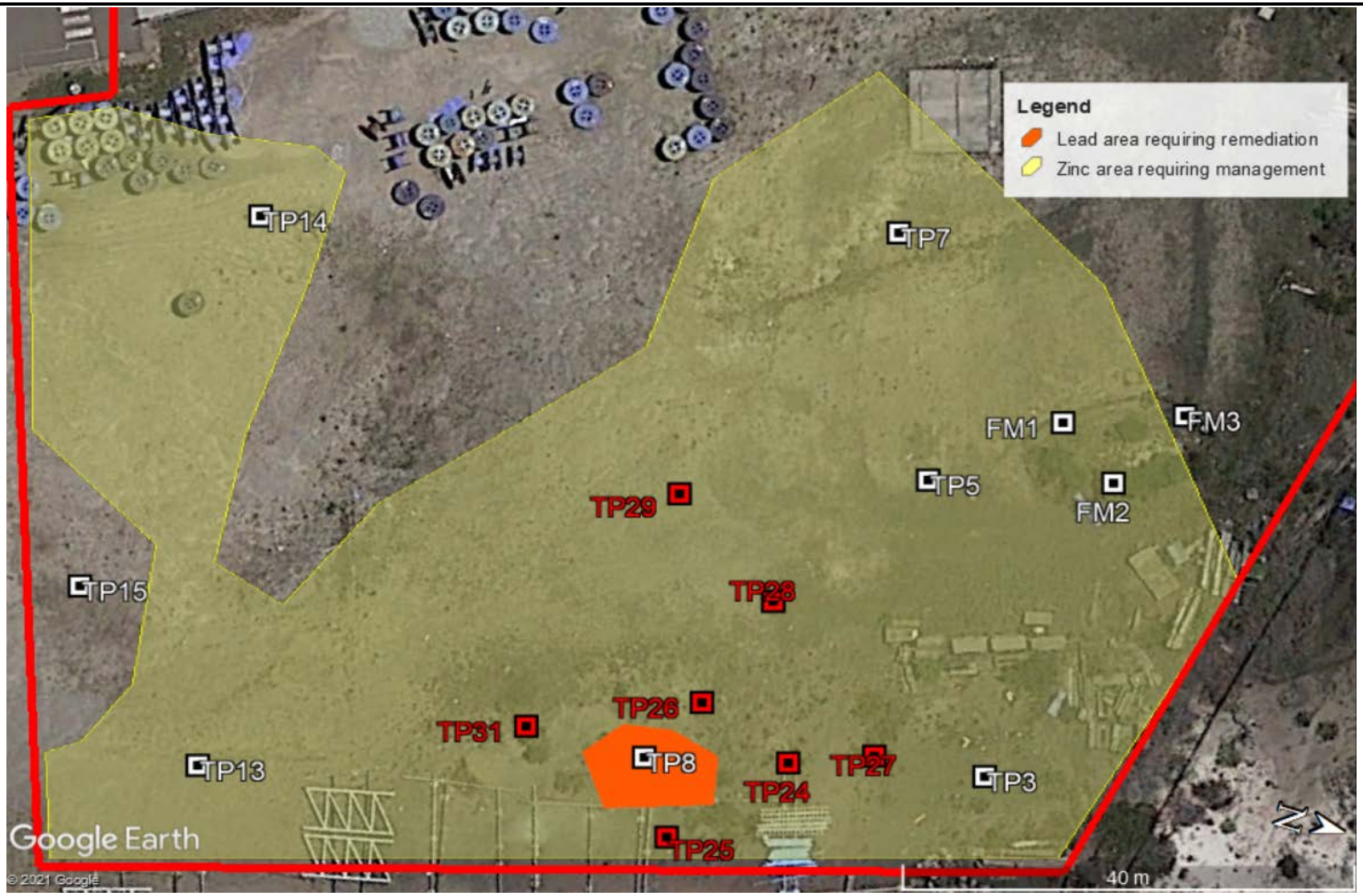
CLIENT: **Remondis**

PROJECT TITLE: **School Drive, Tomago**

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| DWG #: | 1 | DRAWN: | JH | |
| REVISION: | 1 | STATUS: | NFC | |
| SCALE: | As shown | | | |
| DATE: | 5/06/2020 | | | |

FIGURE TITLE: **Proposed Capped Area (Truck Parking)**

FIGURE NUMBER: **6**




| | | | | | | |
|---|---|---|---|---|---|---|
| ENVIRONMENTS | CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | FIGURE TITLE: |
| | | DWG #: | 1 | DRAWN: | JMc | **Areas requiring remediation or management** |
| | | REVISION: | 1 | | | |
| | PROJECT TITLE: **School Drive, Tomago** | SCALE: | As shown | STATUS: | NFC | |
| | | DATE: | 17/07/2021 | | | FIGURE NUMBER: **7** |




ENVIRONMENTS

CLIENT: **Remondis**

PROJECT TITLE: **School Drive, Tomago**

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|---|---|---|---|---|
| PROJECT: | JME20005 | DESIGNED: | JMc | |
| DWG #: | 1 | DRAWN: | JMc | |
| REVISION: | 1 | STATUS: | NFC | |
| SCALE: | As shown | | | |
| DATE: | 17/07/2021 | | | |

FIGURE TITLE: **Groundwater Monitoring Well Location**

FIGURE NUMBER: **8**

# Appendix A

## Previous Contamination Assessments

JM Environments
0427 893 668
37 Tooke St
COOKS HILL NSW 2300
ABN 67 166 341 288

# Detailed Contamination Assessment



## 21D and 21F School Drive, Tomago

Prepared By:

John Howard BSc (Hons)
Environmental Scientist

Approved By:

James McMahon PhD (Chem)
Principal Environmental Scientist
Certified Environmental Practitioner CEnvP 1235
Site Contamination Specialist SC41110

Date: 13 July 2021

Reference: JME20005-2

## RECORD OF DISTRIBUTION

| Report File Name | Report Status | Date | Distributed to | Name | Notes |
|---|---|---|---|---|---|
| JME20005-2 Detailed Contamination Assessment 21D and 21F School Drive Tomago | Final | 3 June 2020 | Remondis Australia Pty Ltd | Susie McBurney | |
| JME20005-2 Detailed Contamination Assessment 21D and 21F School Drive Tomago | Revision 1 | 29 June 2021 | Remondis Australia Pty Ltd<br>GHD<br>Jackson Environment and Planning | Susie McBurney<br>Ian Gregson<br>Mark Jackson | Revision 1 addresses the auditors comments received by email and dated 29 May 2021. |
| JME20005-2 Detailed Contamination Assessment 21D and 21F School Drive Tomago | Revision 2 | 13 July 2021 | Remondis Australia Pty Ltd<br>GHD<br>Jackson Environment and Planning | Susie McBurney<br>Ian Gregson<br>Mark Jackson | Revision 2 addresses the auditors comments received by email and dated 13 July 2021. |
| | | | | | |
| | | | | | |
| | | | | | |

# EXECUTIVE SUMMARY

This report presents the findings of a Detailed Contamination Assessment of 21D and 21F School Drive, Tomago NSW (the site), undertaken by JM Environments (JME). The site had previously been used for sand mining and steel and aluminium manufacturing. It was understood that Remondis Australia Pty Ltd intend to develop the site. The purpose of this assessment was to support a Development Application for the site.

The objectives of this assessment were to:

- Identify potentially contaminating activities that are currently being performed on the site, and that may have been performed on the site in the past;
- Assess Areas of Environmental Concern and Contaminants of Concern on the site; and
- Provide recommendations on further assessment or remediation, if considered necessary.

The following scope of works was undertaken:

- Review of previous contamination assessments;
- Review of published information and government records;
- Drilling and sampling of three boreholes in Lot 11 (one of which was converted to a groundwater monitoring well), in the vicinity of an emulsion storage trench;
- Two hand augers were excavated in areas pf accessible soil in the southern part of Lot 11;
- Excavation and sampling of 15 test pits and two hand augers in the eastern part of the site (Lot 8);
- Sampling of a stockpile near the northern boundary of Lot 8; and
- Laboratory analysis.

Sampling and analysis was limited to soil material on the site; groundwater was not sampled as part of this assessment.

The site was mostly flat, and divided into two parts. The western part of the site (Lot 11) was paved, and contained two large sheds, and some smaller buildings and water tanks. Beneath the pavement, brown gravelly sand, containing concrete and brick rubble to a depth of between 1mbgl and 1.8mbgl, was interpreted to be fill. This material had previously been assessed as meeting the criteria for excavated natural material, and for commercial/industrial land use. Approximately 9,000$m^3$ was removed from Lot 11 for the Medal Cables development. Light brown fine to medium grained sand beneath the fill was interpreted as representing in-situ, 'natural' material. Groundwater was intersected at 2.4mbgl. Hydrocarbon contamination was not detected in samples collected from adjacent to the hydrocarbon trench in Lot 11, indicating that significant contamination of soils in this area had not been caused by leaks from the trench.

The eastern part of the site (Lot 8) was unpaved, and sparsely covered with grass and other low vegetation. Fill mounds including concrete, metal and timber were observed, and concrete beams and concrete-filled tyres had been stockpiled in the northern part of Lot 8.

Fill, comprising brown to black sand, and containing some plastic, road base gravel, brick, concrete, metal and rocks, was observed to a depth of approximately 0.5 - 1mbgl across much of Lot 8. Elevated zinc and copper concentrations in this material were considered to be consistent with the use of sandblasting in the metal manufacturing process.

Beneath the fill, brown sand, interpreted as representing in-situ material, appeared to be largely uncontaminated.

Elevated arsenic, cadmium, copper, lead and zinc concentrations were observed in fill material on the surface in the northeast corner of the site. Elevated lead (4,600mg/kg) was limited to one location, test pit TP8. The lead concentration was more than 250% of adopted Human Health guideline value. Zinc contamination was higher along the northern and eastern borders of Lot 11 with the highest concentrations, 27,000mg/kg (TP8), 25,000mg/kg (TP7) and 18,000mg/kg (TP5), located at or near the lead impact location. Arsenic and copper were also detected at concentrations greater than 250% of the adopted ecological default guideline value at three locations, TP5, TP7 and TP8. Cadmium was detected at concentration less than 250% of the adopted ecological guidelines at the same locations.

Based on this assessment, it was considered that the site had been impacted by contamination comprising heavy metals at concentrations exceeding guideline values for commercial/ industrial land use. JME considers the impact to be minor and that the site could meet the environmental requirements for commercial/industrial land use subject to the development and successful implementation of an appropriate Remedial Action Plan.

Refer to report *JME20005-5 Groundwater Contamination Assessment 21D and 21F School Drive Tomago* for further information regarding groundwater.

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**Appendix H: ProUCL Outputs**

# ACRONYMS

| | |
|---|---|
| ABC | assumed background concentration |
| ACL | added contaminant limits |
| ACM | asbestos containing material |
| AEC | Area of Environmental Concern |
| ALS | ALS Pty Ltd, Sydney |
| APHA | American Public Health Association |
| ASS | Acid Sulfate Soils |
| BaP | benzo[a]pyrene |
| BaP TEQ | benzo[a]pyrene toxicity equivalent quotient |
| BTEX | benzene, toluene, ethylbenzene and xylenes |
| BTEXN | benzene, toluene, ethylbenzene, xylenes and naphthalene |
| CEC | cation exchange capacity |
| CLM Act | NSW Contaminated Land Management Act 1997 |
| COC | Contaminant of Concern |
| CoC | Chain of Custody |
| CSM | Conceptual Site Model |
| CRC CARE | Cooperative Research Centre for Contamination Assessment and Remediation of the Environment |
| DA | Development Application |
| DBYD | Dial-Before-You-Dig |
| DCA | Detailed Contamination Assessment |
| DEC | NSW Department of Environment and Conservation |
| DGV | default guideline values |
| DP | Deposited Plan |
| DQI | Data Quality Indicator |
| DQO | Data Quality Objective |
| EIL | ecological investigation level |
| ENM | excavated natural material |
| EPA | Environment Protection Authority |
| ESL | ecological screening level |
| HIL | health investigation level |
| HSE | health, safety and the environment |

| | |
|---|---|
| HSL | health screening level |
| JME | JM Environments |
| LEP | Local Environmental Plan |
| LOR | limit of reporting |
| MBES | MB Engineering Solutions Pty Ltd |
| mbgl | metres below ground level |
| NATA | National Association of Testing Authorities |
| NEPM | National Environment Protection (Assessment of Site Contamination) Measure |
| NOEH | NSW Office of Environment and Heritage |
| OCP | organochlorine pesticides |
| OPP | Organophosphorus pesticides |
| PAH | polycyclic aromatic hydrocarbons |
| PCB | polychlorinated biphenyls |
| PIL | phytotoxicity based investigation level |
| POEO Act | NSW Protection of the Environment Operations Act 1997 |
| PPE | Personal Protective Equipment |
| PSC | Port Stephens Council |
| QA/QC | Quality Assurance/Quality Control |
| RAP | Remedial Action Plan |
| RPD | relative percentage difference |
| SD | standard deviation |
| SGS | SGS Australia, Sydney |
| SPT | Standard Penetrometer Test |
| SWMS | Safe Work Method Statements |
| TPH | total petroleum hydrocarbons |
| TRH | total recoverable hydrocarbons |
| UCL | upper confidence limit |
| USEPA | United States Environment Protection Authority |
| VENM | virgin excavated natural material |
| VOC | volatile organic compound |

# 1 INTRODUCTION

This report presents the findings of a Detailed Contamination Assessment (DCA) of 21D and 21F School Drive, Tomago NSW (the site), undertaken by JM Environments (JME). The site is identified as Lots 8 and 11 in Deposited Plan (DP) 270328 (as defined in the website maps.six.nsw.gov.au), and is approximately 3.9 hectares in area. The site location is shown in Figure 1, and Lot boundaries are shown in Figure 2.

It is understood that Remondis Australia Pty Ltd intend to develop the site. The purpose of this contamination assessment is to support a Development Application (DA) for the site.

This report includes the results of sampling and analysis previously conducted during a waste classification and excavated natural material (ENM) assessment by MB Engineering Solutions (MBES) (ref: MBE2016 and MBE2017, attached in Appendix G), as well as additional sampling and analysis conducted as part of this assessment. It is noted that MBE2016 was conducted in 2012 and MBE2017 was conducted in 2013 to facilitate the removal of 9,000$m^3$ of soil for the Midal Cables development. Lot 11 has been covered by a concrete slab since that time, and it is considered that the potential for contamination of that part of the site is limited to the excavation of an emulsion storage trench (addressed in Section 7.4.1).

It is further noted that the emulsion storage trench was excavated to around 5-6 metres below ground level (mbgl), which is beneath the water table. It was considered possible that if there were cracks in the concrete lining of this trench, they could have allowed contamination to seep directly into the water table. However, at this stage Remondis has requested soil sampling only be undertaken.

# 2 SCOPE OF WORK

The objectives of this assessment were to:

- Identify potentially contaminating activities that are currently being performed on the site, and that may have been performed on the site in the past;
- Assess Areas of Environmental Concern (AECs) and Contaminants of Concern (COCs) on the site; and
- Provide recommendations on further assessment or remediation, if considered necessary.

The proposed scope of work was prepared in accordance with the following guidelines and documents:

- National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 2013;
- NSW Office of Environment and Heritage (NOEH) Guidelines for Consultants Reporting on Contaminated Sites (August 2011); and
- NSW Environment Protection Authority (EPA) Guidelines for the NSW Site Auditor Scheme 3rd Edition (October 2017).

The following scope of works was undertaken:

- Review of previous assessments regarding the site;
- Review of published information related to soils, acid sulfate soils, geology and hydrogeology;

- Review of previous site ownership (land titles search);
- Review of historical aerial photography over the past 60 years;
- Interviews with people familiar with the history of the site;
- Review of the site's Section 10.7 Certificate;
- Review of NSW EPA notices under the Contaminated Land Management Act 1997 (the CLM Act) and the Protection of the Environment Operations Act 1997 (the POEO Act);
- Search of WaterNSW groundwater database for records of nearby registered groundwater bores;
- Review of the above information, and identification of potential AECs and COCs;
- Site walkover;
- Field work including the collection of soil samples;
- Laboratory analysis;
- Tabulation of analytical results (including previous assessments); and
- Preparation of this DCA report.

# 3 SITE IDENTIFICATION

General site information is provided in Table 1. The site location is shown in Figure 1.

TABLE 1: SUMMARY OF SITE DETAILS

| | |
|---|---|
| Site Address: | 21D and 21F School Drive, Tomago NSW |
| Site Area: | Approximately 3.9 hectares |
| Site Identification: | Lots 8 and 11 DP 270328 at Tomago<br>Local government area of Port Stephens<br>Parish of Stockton<br>County of Gloucester |
| Current Land Use: | Vacant lot and warehouse containing overhead cranes |
| Previous Land Use: | Sand mining<br>Midal Cables International Pty Ltd |
| Proposed Land Use: | Unknown |
| Adjoining Site Uses: | Setco (mechanical engineer) directly west of the site and Tomago Aluminium Smelter further to the west;<br>Vegetated and mostly unoccupied to the north and east;<br>Vacant land with some commercial/industrial premises to the south, and North Channel Hunter River further to the south. |
| Site Coordinates: | Easting 381044, Northing 6367180 |
| Current Zoning: | General Industrial |

# 4 DESKTOP STUDY

## 4.1 Previous Assessment of Lot 11

### 4.1.1 Waste Classification

In 2012, a waste classification assessment of the topsoil/fill was undertaken for Lot 11 by MBES (ref: MBES2016, attached in Appendix G). The purpose of the waste classification was for the removal of the topsoil/fill prior to the construction of the Midal project. MBES2012 included a review of Midal Cables International Pty Limited – Phase 2 Contamination Site Assessment –

Aluminium Rod and Conductor Manufacturing Facility, Tomago NSW – May 2011" (GHD ref 22/15280/93866 R0) was reviewed and the following information was obtained:

- Acid sulfate soils have a low probability of occurring from 2 m below ground surface;
- The adjacent Tomago aluminium smelter began development in 1974;
- Site was developed for metal fabrication in the 1980s;
- 23 samples analysed for a suite of 13 heavy metals;
- 9 samples and composites were analysed for Total Petroleum Hydrocarbons/benzene, toluene, ethylbenzene and xylenes (TPH/BTEX) and Polynuclear Aromatic Hydrocarbons (PAH);
- samples were analysed for Organochlorine Pesticides (OCP) and Polychlorinated Biphenyls (PCB); and
- There were no exceedances of the commercial/industrial health investigation levels in the samples analysed.

Ten test pits were excavated into the natural underlying sand which was intercepted around 0.7mbgs. Twenty-two samples were analysed for BTEX, TRH, PAH and eight heavy metals. Two samples of fibre cement sheeting fragments were collected and analysed for the presence of asbestos. No asbestos was identified in these two samples. The samples analysed by MBES and GHD had chemical concentrations below the general solid waste (CT1) criteria and the ASC HIL D criteria.

The scope of MBES2016 included the installation of three groundwater monitoring wells with deeper samples collected for acid soil assessment purposes. Actual acid sulfate was detected in one sample, MW3 4-4.5mbgs.

#### 4.1.2 ENM Assessment

In 2013, prior to the installation of current buildings and hard stand, ENM assessment was undertaken in the western part of the site (Lot 11) by MBES (ref: MBE2017, attached in Appendix G). Assessment for the presence of acid sulfate soils (ASS) was also undertaken.

It was reported that a previous assessment (MBE2016) considered that subsoils on the site could not be classified as virgin excavated natural material (VENM) due to the impact of past industrial activities, sand mining and contaminated groundwater.

MBE2017 involved the drilling of 35 boreholes (TP1 – TP35, see Figure 3) to a depth of approximately 2mbgl, as well as the excavation of five test pits (1a -1e, see Figure 4) to a depth of approximately 4mbgl.

Field observations from MBE2017 are included with those from this assessment in Section 11.1.

Analytical results from MBE2017 are included with results of this assessment in Summary Table 1, as discussed in Section 11.2.

MBE2017 recorded that:

- Foreign materials (rubber, plastic, paper, cloth, paint, wood and other vegetable matter) were detected at concentrations below those required for ENM exemption; and
- Potential ASS were detected in dark brown material below 3m, at concentrations insufficient to trigger further management.

## 4.2 Site Topography and Drainage

A review of an online topographic map (www.maps.six.nsw.gov.au) indicates that the site is relatively flat and <10m above sea level. Stormwater runoff from the site would presumably flow south into the Hunter River.

## 4.3 Local Soils

The NSW Department of Planning, Industry and Environment –"eSPADE NSW Soil and Land Information" online service indicates that the site lies on disturbed terrain (it is understood that sand extraction has previously taken place on the site) within the Tea Gardens Aeolian Soil Landscape, defined as:

- "Landscape – Pleistocene sandsheets on the Tomago Coastal Plain. Local relief <1m, slopes <5%, elevation 5-8m."
- "Soils – deep (>200 cm), well-drained Humus Podzols on ridges with deep (>200 cm), poorly drained Peaty/Humus Podzols in swales and deep (>200 cm), very poorly drained Acid Peats in swamps."
- "Limitations of this soil landscape include:
    - Permanently high water tables;
    - Seasonal waterlogging;
    - Groundwater pollution hazard; and
    - Strongly to extremely acid soils of low fertility."

## 4.4 Local Geology

The Newcastle 1:250,000 Geology Sheet indicated that the site is located in Quaternary-aged alluvial and fluvial deposits associated with the meandering river valley of the Hunter River, defined by the Newcastle 1:250,000 Geological Sheet as Quaternary Alluvium. As such, the site is underlain by sedimentary deposits comprising mixtures of sands, silts, clays, gravels and "Waterloo Rock".

Soil conditions can vary considerably over relatively short distances in a meandering river valley setting. Generally, the alluvium within the Hexham, Tomago and Raymond Terrace area is made up of barrier sand and channel deposits that exist within the soil profile and are erratically distributed, and both vertically and laterally discontinuous.

Broadly, units within the Quaternary Alluvium comprise (from oldest to youngest) Pleistocene clay, Pleistocene barrier sands, Holocene estuarine clay and recent floodplain deposits. Beneath these sediments, the bedrock comprises interbedded sandstone, siltstone, mudstone and coal of the Permian-aged Tomago Coal Measures.

The Pleistocene clay is typically stiff to hard, and forms the basal surface for the younger deposits. The depth to Pleistocene clay may be typically of the order of 10m to 15m, but can be as deep as 30m to 50m within paleochannels. The Pleistocene barrier sands are typically quartz sands, ranging from 5m to 35m in thickness. Within the sand deposits are cemented 'Coffee Rock' deposits.

## 4.5 Hydrogeology

WaterNSW operates a website listed as realtimedata.waternsw.com.au/water.stm, with search tools that provide summary reports on registered bores in NSW. A search of this website indicated that there were five registered bores on the site, and nine within 500m of the site. A

summary of groundwater bore information is presented in Table 2. Groundwater bore locations are shown in Figure 5.

TABLE 2: GROUNDWATER WELL SUMMARY INFORMATION

| Well ID | Total Depth (m) | Standing Water Level (m) | Water Bearing Zone (m) | Purpose |
|---|---|---|---|---|
| GW079464 | Not recorded | Not recorded | Not recorded | Not recorded |
| GW079463 | Not recorded | Not recorded | Not recorded | Not recorded |
| GW079465 | Not recorded | Not recorded | Not recorded | Not recorded |
| GW079451 | Not recorded | Not recorded | Not recorded | Not recorded |
| GW079452 | Not recorded | Not recorded | Not recorded | Not recorded |
| GW079542 | Not recorded | Not recorded | Not recorded | Not recorded |
| GW079512 | Not recorded | Not recorded | Not recorded | Not recorded |
| GW026942 | 10.70 | Not recorded | 1.50-10.60 | Mineral exploration |
| GW079457 | Not recorded | Not recorded | Not recorded | Not recorded |
| GW079729 | Not recorded | Not recorded | Not recorded | Not recorded |
| GW079439 | Not recorded | Not recorded | Not recorded | Not recorded |
| GW079449 | Not recorded | Not recorded | Not recorded | Not recorded |
| GW059317 | 11.0 | Not recorded | 7.0-11.0 | Industrial |
| GW017544 | 9.10 | Not recorded | Not recorded | Domestic stock, irrigation |

### 4.6 Acid Sulfate Soils

The NSW Department of Planning, Industry and Environment –"eSPADE NSW Soil and Land Information" online service indicates that the site is situated in an area of low probability of ASS occurring >3m below the ground surface (see Figure 6).

The Port Stephens Local Environmental Plan (LEP) 2013 indicates that the site is situated on Class 4 ASS land, which means that:

- Works more than 2 metres below the natural ground surface; or
- Works by which the water table is likely to be lowered more than 2 metres below the natural ground surface;

are required to have an ASS management plan.

MBE2017 recorded that potential ASS were detected in dark brown material below 3m, at concentrations insufficient to trigger further management.

### 4.7 Section 10.7(2) Certificate

A Section 10.7(2) Planning Certificate for the site was obtained from Port Stephens Council (PSC). A copy of the certificate is provided in Appendix C. Table 3 summarises relevant contamination information contained within the certificate.

TABLE 3: SECTION 10.7(2) CERTIFICATE SUMMARY

| | |
|---|---|
| Current Zoning: | General Industrial |
| Critical and Conservation Habitat, and Environmental Heritage: | Port Stephens Local Environmental Plan 2013 does not identify the land as including or compromising critical habitat, and is not within a heritage conservation area. The land also does not contain any item of environmental heritage significance. |
| Coastal Protection Works: | The land is not subject to annual charges under section 496B of the local Government Act 1993 for coastal protection services. |
| Mine Subsidence: | The land is not within a proclaimed or declared mine subsidence district. |
| Road: | The land is not affected by any road widening or road alignment. |

| | |
|---|---|
| Hazard Risk Restrictions: | The land is not affected by RAAF Base Williamtown and Salt Ash Weapons Range 2025 ANEF, or the Aircraft Noise Planning Area within Port Stephens Development Control Plan 2014. |
| Flood: | MINIMAL RISK FLOOD PRONE LAND – Development on the land or part of the land for the purposed of critical emergency response, recovery facilities and infrastructure and development which are particularly vulnerable to emergency response including group homes, seniors housing and child care facilities is subject to flood related development controls. |
| Biodiversity: | The land is not biodiversity certified land under Part 8 of the Biodiversity Conservation Act 2016. The land is also not a biodiversity stewardship site under a biodiversity stewardship agreement. |
| Bush Fire: | Part of the land is identified as bush fire prone land. |
| Loose-fill Asbestos Insulation: | The land does not include any residential residual dwelling identified on the Loose-Fill Asbestos Register as containing loose-fill asbestos ceiling insulation. |

## 4.8 Section 10.7(5) Certificate

A Section 10.7(5) Planning Certificate for the site was also obtained from PSC. A copy of the certificate is provided in Appendix C. Table 4 summarises relevant contamination information contained within the certificate.

TABLE 4: SECTION 10.7(5) CERTIFICATE SUMMARY

| | |
|---|---|
| Tomago Aluminium Smelter Buffer Zone: | This land is located within the Tomago Aluminium Smelter Buffer zone. Tomago Aluminium Company Pty Ltd are required to take all reasonable steps to acquire certain properties within this buffer zone. |
| Aircraft Noise: | All areas of the Port Stephens Local Government Area are now, or are forecast to be, affected by aircraft noise from time to time. |
| Koala Habitat: | Parts of the Port Stephens Local government Area are affected by Koala Habitat and subject to the Port Stephens Comprehensive Koala Plan of Management 2002 made under State Environmental Planning Proposal No. 44. |
| Invasive Species: | Parts of Port Stephens Local Government Area contain plants that pose a risk according to the Biosecurity Act 2015 which may restrict the use of the land. |

## 4.9 NSW EPA Records

### 4.9.1 Contaminated Land Management Act 1997

A search of the NSW EPA's public register of contaminated sites under Section 58 of the CLM Act revealed one record of a Notice for the former Hydromet facility at 25 School Drive, Tomago (see Figure 7). The notice recorded that the premises were deemed to be contaminated due to the presence of lead and chromium in soils and groundwater, and was invalidated on 18 August 2010.

Search results are attached in Appendix D.

### 4.9.2 Protection of the Environment Operations Act 1997

Section 308 of the POEO Act includes:

- environment protection licences;
- applications for new licences and to transfer or vary existing licences;
- environment protection and noise control notices;
- penalty notices issued by the EPA;
- convictions in prosecutions under the POEO Act;

- the results of civil proceedings;
- licence review information. Submissions regarding licence review can be made at any time;
- exemptions from the provisions of the POEO Act or regulations;
- approvals granted under clause 9 of the POEO (Control of Burning) Regulation; and
- approvals granted under clause 7A of the POEO (Clean Air) Regulation.

A search of the public register undertaken on 6 March 2020 returned 126 results for sites in Tomago.

Search results are attached in Appendix D, and are shown in Figure 7.

# 5 SITE HISTORY

## 5.1 Historical Titles Search

A search of historical titles for the site was undertaken by JME. A list of past registered proprietors for the lots dating back to approximately 1947 was obtained. The results of the search are included in Appendix E. A summary of the site's owners is shown in Table 5.

TABLE 5: HISTORY OF TITLE

| Lot 8 270328 | Lot 11 DP 270328 |
|---|---|
| | 2018 Tomago Aluminium Company Pty Ltd |
| | 2011 Midal Cables International Pty Ltd |
| 2003 Tomago Aluminium Company Pty Ltd | |
| 2000 Varley Property Pty Ltd | |
| 1990 Allco Construction Pty Ltd | |
| 1985 Allco Steel Construction Pty Ltd | |
| 1983 Tomago Aluminium Pty Ltd | |
| 1950 Courtaulds (Australia) Ltd | |
| 1947 John Thomas McKee | |
| Jessie Mildred Ruward | |

## 5.2 Aerial Photograph Review

Aerial photographs of the site dating back to 1954 were purchased from the NSW Land and Property Management Authority, and reviewed by a JME environmental scientist, along with imagery available on Google Earth™. The results of the aerial photograph review are summarised in Table 6. Aerial photographs are attached as Figures 11 to 16.

TABLE 6: AERIAL PHOTOGRAPH REVIEW

| Year | Site | Surrounding Land |
|---|---|---|
| 1954 | Completely covered by thick vegetation. | Completely covered by vegetation to the north. Land cleared to the south, some trees and low density residential. |
| 1974 | Site has been cleared, possibly for sand mining. | Large area including the site and to the north, northwest and south has been cleared, possibly for sand mining. Similar low-density residential areas to 1954. |
| 1987 | Allco Steel has been constructed. | Allco Steel has been constructed on and directly around the site. Metal materials stored on site, and a small car park occupies an area to the southwest of the site.<br>More residential lots appear to the south; vegetation has thickened in some parts.<br>Tomago Aluminium has been constructed directly west of the site. |

| Year | Site | Surrounding Land |
|---|---|---|
| | | Possible sand mining cleared land has remained unoccupied. Small amounts of vegetation have begun to grow. |
| 1993 | Similar to 1987. | Similar to 1987. |
| 2007 | Materials appear to have been removed from the site. A small shed appears in the southwest. | Similar to 1993. Additional industrial development to west. |
| 2016 | Large sheds (Midal) have been built in the western part of the site. | Similar to 2007. Residences to the south appear to have been replaced by commercial/industrial premises. |

# 6 SITE WALKOVER

A site walkover was conducted by three JME environmental scientists on 9 March 2020, to conduct a visual assessment of current site activities, potential sources of contamination, property boundaries, surrounding land uses, topography and nearby sensitive environments.

Site features are shown in Figure 2, and site photographs are attached in Appendix A.

The site was mostly flat, and divided into two parts. The western part of the site (Lot 11) was paved, with the exception of some small gardens on the southern boundary. Lot 11 contained two large sheds, and some smaller buildings and water tanks. The buildings were metal clad, with guttering and downpipes to underground (see Photograph 1). Car parks and traffic areas in Lot 11 were concrete and asphalt paved, and contained gratings which presumably led to an underground stormwater system (see Photograph 2). Kerb-and-guttering was observed along the front (southern) boundary of Lot 11, and extended along the southern half of the eastern boundary of Lot 11. Lot 11 was fully surrounded by a chain-link wire fence.

The eastern part of the site (Lot 8) was unpaved, and sparsely covered with grass and other low vegetation (see Photograph 3). Lot 8 sloped gently down towards the north, at <5°. Surface water had previously pooled in low-lying areas near the centre of Lot 8.

The surface of Lot 8 comprised dark grey sand, with common road base gravel and rock (see Photograph 4).

In the northern part of Lot 8, concrete beams and concrete-filled tyres had been stockpiled (see Photographs 5 and 6). A soil stockpile with some shrubs was observed near the northern boundary of Lot 8 (see Photograph 7), and a concrete pad was observed near the middle of Lot 8 (see Photograph 3).

The northern boundary of Lot 8 was marked by a chain link fence (see Photograph 6). The southern and eastern boundaries of Lot 8 were not fenced.

Land adjacent to the north of the site was observed to be low scrub on white sand (see Photograph 6). To the east, the land appeared similar to Lot 8, and to the west was commercial/industrial. To the south was vacant land and some commercial/industrial premises, including the former Hydromet facility (as discussed in Section 4.9.1).

The land use to west as a specialised vehicle manufacturer and it is considered likely that PFAS was used in testing fire vehicles. It is not known whether this activity did take place either on the adjoining land or on the subject site at a time it was vacant land.

# 7 SAMPLING and ANALYSIS QUALITY PLAN

## 7.1 Preliminary Conceptual Site Model

Soils on the site were considered to comprise mostly sand. The western part of the site (Lot 11) was covered by buildings and pavement, underlain by sand which had been assessed as being suitable for ongoing industrial land use. It was understood that a hydrocarbon trench had been installed in Lot 11 subsequent to the previous assessment.

The site had previously been used for sand mining, and steel and aluminium manufacture. The surface of Lot 8 in the eastern part of the site was darker in appearance than sand in surrounding areas, and there was some anthropogenic material (road base, timber, concrete, metal, etc) on the surface.

## 7.2 Data Quality Objectives

### 7.2.1 Step 1 State the Problem

The contamination status of the site was unknown. Remondis had requested the preparation of a DCA to support the submission of a DA.

### 7.2.2 Step 2 Identify the Goal of the Study

The goal of the study was to provide an assessment as to whether the site was suitable, from a contamination point of view, for its proposed continued industrial land use.

### 7.2.3 Step 3 Identify the Inputs Into the Decision

Inputs to the assessment of the site's contamination status were to include:

- Results of the desktop study;
- Laboratory results and field observations from MBE2017;
- Field observations regarding depth of fill (if present) on the site;
- The results of sampling and laboratory analysis; and
- Comparison of laboratory results with soil assessment criteria derived in Section 7.7.

### 7.2.4 Step 4 Define the Site Boundaries

The lateral extent of the site was defined as Lots 8 and 11 DP270328; the site is approximately 3.9 hectares in area. The site location is shown in Figure 1.

The western part of the site (Lot 11) had been the subject of previous assessments (see Section 4.1). Therefore, the majority of this assessment was to focus on the western part of the site, with the addition of the assessment of soil surrounding a hydrocarbon capture trench and areas of exposed soil in Lot 11.

Test pits in Lot 8 were to be terminated at the base of fill. Boreholes in Lot 11 were to be continued to the top of groundwater.

This report represents an assessment of the contamination status of the site, based on observations and sampling conducted between 8 January 2013 and 7 April 2020.

### 7.2.5 Step 5 Develop an Analytical Approach

The analytical approach was to be as follows:

- Data Quality Indicators (DQIs) were to be applied as per Section 7.8.1. If the results of the analytical data validation were acceptable with respect to the DQIs, then the data was to be deemed suitable for the purposes of this assessment; and
- Analytical results from this assessment were to be assessed against criteria established in Section 7.7. If contaminant concentrations were less than or equal to the adopted default guideline values (DGVs), it would indicate the site's suitability for its ongoing industrial land use.

#### 7.2.6 Step 6 Specify the Performance or Acceptance Criteria

Potential decision errors were considered to include:

- Sampling errors, which occur when collected samples are not representative of conditions within the investigation area; and
- Measurement errors, which occur during sample collection, handling, preparation, analysis and data production.

These errors may lead the decision maker to make the following errors:

- Deciding that the investigation area is suitable for residential land use when it is actually not; and
- Deciding that the investigation area is not suitable for residential land use when it actually is.

An assessment was to be made as to the likelihood of a decision error being made based on the results of a Quality Assurance/Quality Control (QA/QC) assessment, and the closeness of analytical results to the investigation criteria outlined in Section 7.7. It was considered that a margin for error would be accounted for by the level of conservatism built into guideline DGVs.

#### 7.2.7 Step 7 Optimise the Design for Obtaining Data

In order to optimise the efficiency of data collection:

- JME was to use available desktop resources (including previous contamination assessments) to allow sampling operations to be focussed in areas where less information was currently available;
- Two locations only were to be sampled in Lot 11, targeting a hydrocarbon capture trench installed since previous contamination assessments were undertaken. Remaining locations were to be situated in Lot 8 where the contamination status of the site was less well understood;
- A drilling rig with concrete coring capability was to be used for sampling in areas of the site covered by a concrete slab; and
- A 1.8 tonne excavator was to be used in unpaved areas of shallow fill.

In order to optimise the quality of data collected, JME was to use:

- Experienced JME field staff to collect samples;
- National Association of Testing Authorities (NATA)-accredited laboratories. Laboratory analysis was to be in accordance with the requirements of the NEPM Schedule B3 Guideline on Laboratory Analysis of Potentially Contaminated Soils, and to be referenced to United States Environment Protection Authority (USEPA) or American Public Health Association (APHA) methods.

Details of sampling methods and analytical requirements are discussed in Sections 7.4 and 7.6.

## 7.3 Pre-Mobilisation Requirements

Regulatory provisions required to be completed prior to sampling on site included:

- Preparation of site-specific Safe Work Method Statements (SWMS);
- On-line Tomago Aluminium site inductions for all involved personnel; and
- Granting of a Permit to Excavate, subject to:
    - Dial-Before-You-Dig (DBYD) request;
    - Clearance by a licensed service locator; and
    - Assessment by Tomago Aluminium responsible person.

## 7.4 Sampling Plan

### 7.4.1 Sampling Location Rationale

As discussed in Section 4.1, it was considered that the contamination status of the western part of the site (Lot 11) was sufficiently well understood for the purposes of this assessment. Systematic sampling from test pits located to provide overall site coverage was therefore to be concentrated in Lot 8.

The NSW EPA Sampling Design Guidelines (1995) recommend a minimum of 50 sampling points in order to characterise a site of four hectares, with respect to contamination. In order to satisfy this recommendation, JME proposed to sample from 15 test pits as part of this assessment, to complement the 35 boreholes sampled from in MBE2017.

Targeted sampling boreholes were to be located in the vicinity of a hydrocarbon trench and exposed soils on Lot 11, constructed since that part of the site was assessed in MBE2017. It is noted that test pits 1a – 1e in MBE2017 were also sampled to provide information in the vicinity of the hydrocarbon trench.

### 7.4.2 Sampling Procedures

In Lot 11, two locations in the vicinity of the hydrocarbon capture trench were to be concrete cored and excavated using a truck-mounted drilling rig fitted with solid flight augers. A Standard Penetrometer Test (SPT) was to be conducted at depths of 1m and 2m in each borehole.

Soil samples were to be collected from each borehole:

- At the surface, directly from disturbed soil below the concrete pavement;
- From each SPT interval, from the split spoon sampler; and
- At additional intervals from the auger flights, if changes in lithology were observed.

Boreholes were to be terminated at the perceived top of groundwater.

In Lot 8, 15 test pits were to be excavated using a 1.8 tonne excavator. Soil samples were to be collected from the surface, and at approximately 1m intervals in fill thereafter. Additional samples were to be collected at observed changes in lithology;

Test pits were to be terminated at the base of fill.

Test pits and boreholes were to be logged to record changes in lithology and sampling intervals, and locations were to be recorded on a site plan.

## 7.5 Health, Safety and the Environment

### 7.5.1 Hazards and Control Measures

During drilling and sampling operations, there is potential for hazards to be encountered that present risks to health, safety and the environment (HSE). These risks were to be addressed via the use of SWMS, including considerations as listed in Table 7.

TABLE 7: HSE HAZARDS and CONTROL MEASURES

| Activity | Hazard | Control |
|---|---|---|
| Set up on site | Interaction with other site users | Sign onto site register<br>Demarcate work area, exclusion zone |
| Drilling/excavation | Underground services | DBYD<br>Service location<br>Permit to Excavate |
| | Noise | Hearing protection |
| | Interaction with rig/excavator | Exclusion zone<br>Communicate with operators |
| Collecting samples | Unknown contaminants | Disposable gloves and cut-resistant gloves |

### 7.5.2 Personal Protective Equipment

Personal Protective Equipment (PPE) for the site was to include:

- Hard hat;
- Safety glasses;
- High visibility workwear;
- Long sleeves and trousers;
- Steel-capped boots;
- Chemical resistant rubber gloves (for persons coming in contact with soil); and
- Dust resistant disposable overalls and P1 (minimum) dust masks (when handling potentially asbestos contaminated soil).

## 7.6 Analysis Plan

Primary and duplicate samples were to be analysed by SGS Australia (SGS), Sydney, and triplicate samples were to be analysed by ALS Pty Ltd (ALS), Sydney. Selected samples were to be analysed for the following:

- Benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN);
- Total recoverable hydrocarbons (TRH, also reported as total petroleum hydrocarbons (TPH)) ;
- Polycyclic aromatic hydrocarbons (PAH);
- Volatile organic compounds (VOCs);
- Heavy metals (As, Cd, Cr, Cu, Pb, Ni, Zn and Hg);
- Per- and polyfluoroalkyl substances (PFAS)
- Phenols;
- Organochlorine pesticides (OCP);
- Organophosphorus pesticides (OPP);
- Polychlorinated biphenyls (PCB);
- pH; and
- Cation exchange capacity (CEC).

Laboratory analytical methods are summarised in Table 8.

TABLE 8: SUMMARY OF ANALYTICAL METHOD REFERENCES

| Analysis | Medium | SGS Reference | ALS Reference |
|---|---|---|---|
| Metals | Soil | USEPA Method 200.8 and 6010C | APHA 3120 and USEPA SW 846 - 6010 |
| Mercury | Soil | APHA 3112 and 3500 | AS 3550 and APHA 3112 |
| BTEXN | Soil | USEPA 5030B, 8020A and 8260 | USEPA SW 846 - 8260B |
| TRH | Soil | USEPA 5030B, 8020A and 8260 | USEPA SW 846 - 8260B and USEPA SW 846 - 8015A |
| PAH | Soil | USEPA 3500C and 8270D | USEPA SW 846 - 8270D |
| VOC | Soil | USEPA 5030B, 8020A and 8260 | - |
| Phenols | Soil | USEPA 3500C and 8270D | - |
| OCP/OPP/PCB | Soil | USEPA 3510, 3550, 8140, 8080, 3500C and 8270D | - |
| pH | Soil | APHA 4500-H+ | - |

## 7.7 Soil Assessment Criteria

Soil DGVs were established from the NEPM Schedule B1, Guideline on Investigation Levels for Soil and Groundwater. The NEPM provides a framework for the use of investigation and screening levels. The framework is based on a matrix of human health and ecological soil investigation screening levels and guidance for specific contaminants. The selection of the most appropriate investigation levels for use in a range of environmental settings and land use scenarios should consider factors including the protection of human health, ecosystems, groundwater resources and aesthetics. A balance between the use of generic soil, soil vapour and groundwater criteria and site-specific considerations is essential practice in site assessment.

The site's current zoning is General Industrial. It is not known what Remondis propose to use the site for. JME considers the land use setting applicable to the site to be:

- HIL D - commercial/industrial such as shops, offices, factories and industrial sites.

Soil health investigation level (HILs), health screening levels (HSLs), ecological investigation level (EILs), ecological screening level (ESLs) and management limits were developed from:

- Table 1A(1) Health investigation levels for soil contaminants;
- Table 1A(3) Soil HSLs for vapour intrusion;
- Table 1B(1) Soil-specific added contaminants for aged zinc in soil (dependent on soil pH and CEC;
- Table 1B(2) Soil-specific added contaminant limits for aged copper in soils (dependent on soil pH or CEC);
- Table 1B(3) Soil-specific added contaminant limits for aged chromium III (dependent on
- % clay) and nickel (dependent on CEC) in soil;
- Table 1B(4) Generic added contaminant limits for lead in soils irrespective of their physicochemical properties;
- Table 1B(5) Generic EILs for aged As, fresh DDT and fresh naphthalene in soils irrespective of their physicochemical properties;
- Table 1B(6) ESLs for TPH fractions F1 – F4, BTEX and benzo[a]pyrene in soil;

- Table 1B(7) Management Limits for TPH fractions F1-F4 in soil;
- Table 7 Health screening levels for asbestos contamination in soil; and
- NEPM 1999 Errata Updated 30 April 2014.

No EILs are listed for cadmium or mercury, hence the provisional phytotoxicity based investigation levels (PILs) from Column 5 of Appendix II of the NSW Department of Environment and Conservation (DEC) Guidelines for the NSW Site Auditor Scheme (2nd edition) have been adopted.

The ESL for benzo[a]pyrene (BaP) listed in the NEPM is derived from an older set of Canadian soil quality guidelines, which have subsequently been revised. A higher reliability ecological guideline value for BaP has been adopted from CRC CARE Technical Report No. 39 'Risk-based management and remediation guidance for benzo(a)pyrene'.

Where a COC has a level listed in more than one table, the more conservative value was adopted as the DGV.

Tables 1B (1-3) require that CEC and soil pH be analysed in order to select added contaminant limits (ACL) values for zinc, copper and nickel. ACLs were selected based on the most conservative (ie lowest) values for CEC (0.79cmolc/kg) and pH (7.0) detected during this assessment.

EILs for copper, chromium, nickel, lead and zinc were calculated by adding the ACL to an assumed background concentration (ABC) for 'old suburb, high traffic' sites (taken from NEPM Schedule B5c, Guideline on Ecological Investigation Level for Arsenic, Chromium (III), Copper, DDT, Lead, Naphthalene, Nickel & Zinc).

Sampled material was observed to be predominantly sandy (see Section 11.1); therefore where ESLs are dependent on particle size, the coarsest grain size has been used.

PFS DGVs were taken from the 'PFAS National Environmental Management Plan Version 2.0', Heads of EPA Australia and New Zealand 2020 (NEMP2.0). NEMP2.0 provides human health investigation levels for perfluorooctane sulfonic acid (PFOS), perfluorohexane sulfonate (PFHxS) and perfluorooctanoic acid (PFOA). These were derived using the methodology consistent with assumptions set out in the NEPM for HIL D.

Adopted soil assessment criteria are shown in Table 9.

TABLE 9: SOIL ASSESSMENT CRITERIA

| Analyte Name | Units | HIL | HSL | EIL | ESL | ACL | ABC | Management Limit |
|---|---|---|---|---|---|---|---|---|
| Benzene | mg/kg | - | 3 | - | 75 | - | - | - |
| Toluene | mg/kg | - | - | - | 135 | - | - | - |
| Ethylbenzene | mg/kg | - | - | - | 165 | - | - | - |
| Xylenes | mg/kg | - | 230 | - | 180 | - | - | - |
| TRH C6-C10 (F1) | mg/kg | - | 250 | - | 215 | - | - | 700 |
| TRH >C10-C16 (F2) | mg/kg | - | - | - | 170 | - | - | 1,000 |
| TRH >C16-C34 (F3) | mg/kg | - | - | - | 1,700 | - | - | 3,500 |
| TRH >C34-C40 (F4) | mg/kg | - | - | - | 3,300 | - | - | 10,000 |
| Naphthalene | mg/kg | - | - | 370 | - | - | - | - |
| Benzo(a)pyrene | mg/kg | - | - | - | 172 | - | - | - |
| BaP TEQ | TEQ | 40 | - | - | - | - | - | - |
| Total PAH | mg/kg | 4,000 | - | - | - | - | - | - |
| Sum of PFOS and PFHxS | mg/kg | 20 | | | | | | |

| Analyte Name | Units | HIL | HSL | EIL | ESL | ACL | ABC | Management Limit |
|---|---|---|---|---|---|---|---|---|
| PFOA | mg/kg | 50 | | | | | | |
| Total Phenols | mg/kg | 240,000 | - | - | - | - | - | - |
| Cresols | mg/kg | 25,000 | | | | | | |
| DDT | mg/kg | - | - | 640 | - | - | - | - |
| DDT+DDE+DDD | mg/kg | 3,600 | - | - | - | - | - | - |
| Aldrin and Dieldrin | mg/kg | 45 | - | - | - | - | - | - |
| Chlordane | mg/kg | 530 | - | - | - | - | - | - |
| Endosulfan | mg/kg | 2,000 | - | - | - | - | - | - |
| Endrin | mg/kg | 100 | - | - | - | - | - | - |
| Heptachlor | mg/kg | 50 | - | - | - | - | - | - |
| HCB | mg/kg | 80 | - | - | - | - | - | - |
| Methoxychlor | mg/kg | 2,500 | - | - | - | - | - | - |
| Chlorpyrifos | mg/kg | 2,000 | - | - | - | - | - | - |
| Total PCBs | mg/kg | 7 | - | - | - | - | - | - |
| Arsenic, As | mg/kg | 3,000 | - | 160 | - | - | 5 | - |
| Cadmium, Cd | mg/kg | 900 | - | 3 | - | - | - | - |
| Chromium, Cr | mg/kg | 3,600 | - | 330 | - | 310 | 15 | - |
| Copper, Cu | mg/kg | 240,000 | - | 170 | - | 140 | 30 | - |
| Lead, Pb | mg/kg | 1,500 | - | 2,000 | - | 1,800 | 160 | - |
| Nickel, Ni | mg/kg | 6,000 | - | 60 | - | 55 | 5 | - |
| Zinc, Zn | mg/kg | 400,000 | - | 480 | - | 360 | 120 | - |
| Mercury | mg/kg | 730 | - | 1 | - | - | - | - |
| Bonded ACM | % | - | 0.05% | - | - | - | - | - |
| FA and AF (friable asbestos) | % | - | 0.001% | - | - | - | - | - |
| All forms of asbestos | No visible asbestos for surface soil | | | | | | | |

In the NEPM, the preferred approach is to examine a range of summary statistics including the contaminant range, median, arithmetic/geometric mean, standard deviation (SD) and 95% upper confidence limit (UCL).

The NEPM recommends, at the very least, the maximum and the 95% UCL of the arithmetic mean contaminant concentration should be compared to the relevant DGV. The implications of localised elevated values (hot spots) should also be considered. The results should meet the following criteria:

- The SD of the results should be less than 50% of the relevant investigation or screening level; and
- No single value should exceed 250% of the relevant investigation or screening level.

Laboratory results were compared with soil investigation and screening levels for commercial/industrial land use. The comparisons are summarised in Summary Table 1 (attached).

### 7.8 Quality Assurance/Quality Control Plan

The QA/QC plan was designed to achieve predetermined DQIs that would demonstrate accuracy, precision, comparability, representativeness and completeness of the data generated.

### 7.8.1 Data Quality Indicators for the Project

DQIs for the project were to be based on field and laboratory considerations in the table in Appendix V of the NSW DEC Guidelines for the NSW Site Auditor Scheme (2nd Edition) and NEMP2.0. Specific DQIs for field and laboratory QA/QC samples are shown in Table 10.

TABLE 10: DATA QUALITY INDICATORS

| Type of Quality Control Sample | Control Limit |
|---|---|
| Duplicate Samples | RPDs within 50% for analyte concentrations greater than 5 x LOR. |
| Rinsate Samples (deionised water) | Analytes not detected at concentrations greater than the blank water. |
| Spikes | Laboratory spike acceptance limits are a "live" range and updated regularly. The laboratory acceptance limits at the time of analysis will be used. |
| Blanks | Analytes not detected. |

A review of the DQIs was to be undertaken to assess the usability and representative nature of data generated from the project. The outcome of the DQI assessment would either:

- Recommend the data is suitable to be used for the project; or
- Limit the suitability of the data to be used, or
- Recommend further contamination/validation sampling.

### 7.8.2 Sampling Protocols

The following sampling protocols were to be observed during the project:

- Test pit samples were to be collected from the centre of the excavator bucket load, to reduce the potential for cross-contamination;
- Borehole samples were to be collected either directly from the auger flight, or from the SPT split spoon, which was to be decontaminated prior to each use by scrubbing with a mixture of Decon90® phosphate-free detergent and potable water;
- Samples were to be collected using a clean pair of disposable nitrile gloves, which were to be changed between each sample;
- Samples were to be placed into appropriate laboratory-supplied glass jars with Teflon™ lined lids, and kept on ice during transport to the laboratory;
- Samples were to be dispatched to the laboratory under chain of custody (CoC) conditions. CoC documentation was to include:
    - sample identification of each sample;
    - date sampled; and
    - date dispatched to the laboratory; and
- Samples were to be dispatched within two days of collection, to avoid holding time exceedances.
- PFAS specific handling protols
    - Prior to sampling, the sampling personnel must wash their hands with plain soap and rinse thoroughly in tap water before donning a clean, new pair of disposable nitrile gloves;
    - Teflon®-coated materials and aluminium foil may not come into contact with the sample.
    - During sampling and storage, minimise the exposure of the sample to light by storing in a cooler box with the lid on.

### 7.8.3 Field Quality Control Samples

The following quality control samples were to be collected in the field:

- Intra-laboratory duplicate samples were to be collected at the rate of 1 per 20 primary samples collected;
- Inter-laboratory triplicate samples were to be collected at the rate of 1 per 20 primary samples collected;
- The relative percentage difference (RPD) of analyte concentrations between duplicates and triplicates and their respective primary samples was to be calculated to assess whether field sampling procedures produce reproducible results;
- A rinsate sample was to be collected from the SPT split spoon using demineralised water purchased from a service station. The rinsate sample was to be submitted and analysed to assess the effectiveness of decontamination procedures;
- A rinsate sample was to be collected from the hand auger using tap water between sampling for PFAS. The tap was to be tested before and after the auger had been rinsed; and
- Trip blank and trip BTEX spike samples were to accompany samples to SGS.

### 7.8.4 Laboratory Quality Control

Laboratory quality control protocols were to include the following:

- Laboratory analysis of samples was to be undertaken by NATA-accredited environmental testing laboratories;
- Laboratories were to implement a quality control plan conforming to the NEPM Schedule B3 Guidelines for Analysis of Potentially Contaminated Soils;
- Laboratory methods were to conform with USEPA methods (laboratory analytical methods are summarised in Table 8);
- Laboratories were to analyse reagent blanks, spike samples, duplicate spikes, matrix spikes, and surrogate spikes and duplicates to assess the laboratory's quality control; and
- Laboratories were to extract and/or analyse the samples within the required holding times. A summary of the holding times for extraction and/or analysis for COCs in this assessment is shown in Table 11.

TABLE 11: EXTRACTION AND ANALYSIS HOLDING TIME SUMMARY

| Analysis | Medium | Extraction | Analysis |
|---|---|---|---|
| BTEXN | Soil | 14 days | 35 days from extraction |
| TRH | Soil | 14 days | 35 days from extraction |
| PAH | Soil | 14 days | 35 days from extraction |
| VOC | Soil | 14 days | 35 days from extraction |
| Metals | Soil | 6 months | 6 months |
| Mercury | Soil | 26 days | 26 days |
| Phenols | Soil | 14 days | 35 days from extraction |
| OCP/OPP/PCB | Soil | 14 days | 35 days from extraction |
| pH | Soil | 7 days | 4 days from extraction |
| CEC | Soil | 26 days | 26 days |
| PFAS | Soil | 6 months | 35 days from extraction |

# 8 FIELD WORK

Prior to sampling, JME undertook a DBYD search and engaged an underground service locator to clear each of the sampling locations. Excavation permits were provided by Tomago Aluminium.

Test pit and borehole locations are recorded in Figure 8.

Field work was conducted by three JME environmental scientists on 6 and 7 April 2020 and by a JME environmental scientist on 3 and 11 June 2021.

Three locations (BH1, BH2 and MW10) were concrete cored and excavated using a 4truck-mounted drilling rig fitted with solid flight augers. Location MW10 was drilled three times in close proximity due to refusal of on large rock ballast at around 1.5m depth in the first two attempts. Boreholes BH1 and BH2 were terminated at the perceived top of groundwater. Borehole MW10 was extended to 2m beyond the perceived groundwater depth for the purposes of constructing a groundwater well. Refer to report *JME20005-5 Groundwater Contamination Assessment 21D and 21F School Drive Tomago* for further information regarding groundwater.

At depths of 1m and 2m in borehole BH2, an SPT was conducted. Results are recorded in Table 12. The SPT was not conducted in BH1 due to the risk of equipment damage in an off-centred hole, caused by rubble in fill near the top of the hole.

Four locations were excavated using a hand auger, two locations HA1 and HA2, targeted exposed soils on Lot 11 and two locations, HA3 and HA4 were on Lot 8.

Soil samples were collected from each borehole:

- Immediately below the concrete slab (0.2-0.3m);
- From each SPT interval, from the split spoon sampler; or
- At 1m intervals from borehole BH1 where the SPT was not deployed; and
- At additional intervals from the auger flights, when changes in lithology were observed.
  or
- From the hand auger flight.

In Lot 8, 15 sites (TP1 – TP15) were excavated using a 1.8 tonne excavator and three samples (FM1-FM3) were collected from a fill mound located in Lot 8.

Samples were collected from the surface, and at observed changes in lithology in 0.1m intervals. Test pits were terminated at the base of fill.

TABLE 12: BOREHOLE SAMPLES

| Borehole | SPT | | Sample | |
|---|---|---|---|---|
| | Depth | Result | Depth | Collected From |
| BH1 | | | 0.2m – 0.3m | Surface |
| | | | 1.0m – 1.1m | Auger flight |
| | | | 1.4m – 1.5m | Auger flight |
| | | | 1.9m – 2.0m | Auger flight |
| | | | 2.4m – 2.5m | Auger flight |
| BH2 | | | 0.2m – 0.3m | Surface |
| | 1.0m – 1.45m | 10, 19, 25 | 1.0m – 1.45m | SPT split spoon |
| | 2.0m – 2.45m | 9, 13, 13 | 2.0m – 2.45m | SPT split spoon |
| HA1 | | | 0.1-0.3 | Surface |
| | | | 0.9-1.1 | Auger flight |
| | | | 1.9-2.1 | Auger flight |
| HA2 | | | 0.1-0.3 | Surface |
| | | | 0.9-1.1 | Auger flight |
| | | | 1.9-2.1 | Auger flight |
| HA3 | | | 0.1-0.3 | Surface |
| | | | 0.9-1.1 | Auger flight |
| | | | 1.9-2.1 | Auger flight |
| HA4 | | | 0.1-0.3 | Surface |
| | | | 0.9-1.1 | Auger flight |
| | | | 1.9-2.1 | Auger flight |
| MW10 | | | 0.1-0.3 | Surface |
| | | | 0.9-1.1 | Hand auger flight |
| | | | 1.9-2.1 | Auger flight |

Removal of roots etc from the 0-0.1 of hand augers samples caused substantial loss of soil limiting the amount sample that could be collected for the actual surface.

# 9 LABORATORY ANALYSIS

Primary and duplicate samples were analysed by SGS, Sydney, and triplicate samples were analysed by ALS, Sydney. Selected samples were analysed for the following:

- BTEXN;
- TRH;
- PAH;

- VOC;
- Heavy metals (As, Cd, Cr, Cu, Pb, Ni, Zn and Hg);
- PFAS
- Phenols;
- OCP;
- OPP;
- PCB;
- pH; and
- CEC.

# 10 QUALITY ASSURANCE / QUALITY CONTROL

QA/QC protocols for ENM sampling and analysis in Lot 11 conducted by MBES are discussed in MBE2017 (attached in Appendix G).

Test pit samples were collected from the centre of the excavator bucket load, to reduce the potential for cross-contamination. Borehole samples were collected either directly from the auger flight, or from the SPT split spoon, which was decontaminated prior to each use by scrubbing with a mixture of Decon90® phosphate-free detergent and potable water. The hand auger was washed twice with tap water (sourced from site) after each sampling event. Samples, QCA and QCB, of the tap water was collected before and after the auger was washed, See Plates 1 and 2.



**Plate 1: QCA** collected prior to washing the hand auger.



**Plate2:** QCB collected after washing the hand auger.

Samples were collected using a clean pair of disposable nitrile gloves, which were changed between each sample. General contamination samples were placed into appropriate laboratory-supplied glass jars with Teflon™ lined lids. Samples collected specifically for the analysis of

PFAS were placed laboratory supplied plastic jars that were deemed by the labortaory to be free of PFAS. Samples were kept on ice during transport, and received by the primary laboratory at a temperature of:

- 16°C for samples collected on 6 and 7 April 2020;
- 15°C for samples collected on 3 June 2021; and
- 5°C for samples collected on 11 June 2021;

Samples were transported to the laboratory under CoC conditions (CoC documentation is included in Appendix F), and received by the laboratories with sufficient time to undertake analyses within specified holding times.

During the assessment, field duplicate and triplicate, and rinsate samples were collected and analysed, to check whether field sampling procedures produced reliable results. The RPD of analyte concentrations between duplicates and their respective primary samples were calculated to be within the acceptance criterion of 50% for concentrations greater than 5x the laboratory limit of reporting (LOR), with the following exceptions (note that RPD calculations that rely of the addition of individual analytes or bands of analytes are not considered relevant):

- Samples collected 6 and 7 April 2020:
    - TP8 0 and QC2
        - Arsenic 108%
        - Nickel 74%
    - TP8 0 and QC2A
        - Arsenic 143%
        - Cadmium 52%
        - Nickel 125%
- Samples collected on 3 June 2021:
    - FM1 and QC3
        - Arsenic 127%
        - Chromium 53%
        - Copper 73%
        - Lead 53%
        - Zinc 199%
    - FM1 and QC3A
        - Chromium 62%
        - Copper 55%
        - Lead 71%
        - Nickel 58%
        - Zinc 199%
- Samples collected on 11 June 2021:
    - No exceedances

RPD results are included in Summary Table 3 (attached). Of note is the primary result for zinc in the primary sample FM1 (5.5mg/kg) compared to the intra-laboratory duplicate QC3 (1,600mg/kg) and interlaboratory QC3A (1,750mg/kg). The primary result was significantly below the adopted ecological default guideline value whereas the QA/QC samples were greater than 250% of the adopted ecological default guideline value. The result from QC3A will be adopted as the primary result for the contamination assessment of the site.

During the assessment a rinsate sample (QCA) was collected on the 6/4/2021 using demineralised water purchased from a service station, from the SPT split spoon used to sample BH2. The rinsate sample was submitted and analysed to assess the effectiveness of decontamination procedures. Analytes were not detected at concentrations above the laboratory LOR, with the exception of zinc (43 µg/L). This indicates that the risk of cross contamination is minimal.

During the assessment a 'trip spike' sample was submitted and analysed to assess the potential for loss of volatile contaminants during transit. Analytes were detected at concentrations between 95% and 101% of the original value.

During the assessment a 'trip blank' sample was submitted and analysed to assess the potential for cross-contamination between samples during transit. Analytes were not detected at concentrations above the laboratory LOR.

QA/QC results are included in Summary Table 3 (attached).

During the PFAS soil assessment two 'rinsate' samples were collected from the final auger rinse. One before the final rinse was used, QCA 11/6/2021, and one after the final rinse was used, QCB 11/6/2021. PFOS was detected at 0.003µg/L, compared to a reporting limit of 0.002 µg/L, in QCB, indicating the potential of significant cross or introduced contamination from the sampling equipment was low.

SGS is NATA-accredited for the analyses requested. SGS conducted internal quality control using spikes, laboratory duplicates and method blanks. A review of SGS's data quality objectives (DQOs) for the analysis of soil samples indicated that DQOs were met, with the exception of:

- For samples collected 6 and 7 April 2020:
    - Extraction date exceedance of 3 days for pH in soil for 8 items;
    - Surrogate analysis for PAH in Soil for 1 item (at least 2 of 3 surrogates were within acceptance criteria);
    - Duplicate analysis for Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES for 10 items, due to sample heterogeneity;
    - Duplicate analysis for Volatile Petroleum Hydrocarbons in Soil for 3 items;
    - Duplicate analysis for Volatile Petroleum Hydrocarbons in Soil for 1 item (at least 2 of 3 surrogates were within acceptance criteria);
    - Matrix Spike analysis for Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES for 1 item, due to sample heterogeneity;
    - Matrix Spike analysis for Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES for 3 items, due to matrix interference; and
    - Matrix Spike analysis for VOCs in Soil for 1 item (at least 2 of 3 surrogates were within acceptance criteria).
- Samples collected on 3 June 2021:
    - Duplicate analysis for Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES for 4 items, due to sample heterogeneity;
    - Matrix Spike analysis for Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES for 3 item, due to sample heterogeneity or Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).

- Samples collected on 11 June 2021:
    - No exceedances in QA/QC analysis on samples submitted by JME.

ALS is NATA-accredited for the analyses requested. ALS conducted internal quality control using spikes, laboratory duplicates and method blanks. A review of ALS's DQOs for the analysis of soil samples indicated that DQOs were met in QA/QC analysis on samples submitted by JME.

Based on a review of QA/QC results it is considered that analytical results are indicative of the contamination status of the site at the time of sampling. The highest value of the primary sample, duplicate sample and triplicate sample was used for the assessment.

Laboratory QA/QC documentation is included in Appendix F.

# 11 RESULTS

## 11.1 Field Observations

Sampling locations are shown in Figure 8, borehole and test pit logs are included in Appendix B, and photographs are included in Appendix A.

MBE2017 (attached in Appendix G) recorded that soils in Lot 11 generally comprised fine to medium grained sand, white to dark brown in colour, with some gravel. Up to 0.2m of gravelly sandy clay fill was observed over some of the site.

During this assessment, the three borehole locations in Lot 11 were covered by concrete pavement 0.20m thick. Beneath the pavement, brown gravelly sand, containing concrete and brick rubble to a depth of between 1mbgl and 1.8mbgl, was interpreted to be imported recovered aggregate used for haul road construction of the former Midal development (based on JME observations during the Midal construction period). Light brown fine to medium grained sand was observed to the base of the boreholes, interpreted as representing in-situ, 'natural' material. Groundwater was interpreted as having been intersected at 2.4mbgl, and boreholes were terminated at 2.5mbgl.

Test pit observations are detailed in Table 13 (below).

In general, Lot 8 was covered by sand, grey to grey brown, with common road base gravel. Beneath this, dark grey to black sand was interpreted as representing fill. A layer of yellow brown to orange brown gravelly clay and clayey gravel was observed in some test pits. Below approximately 0.5 – 1.0mbgl, grey brown sand was interpreted as being in-situ, natural material.

The fill mound was considered to be a designed stockpile as evident from the silt fencing placed around it. It is considered likely that stockpile was generated from the Midal project construction.

Additional observations were as follows:

- Test pit TP1 was terminated at 1.6mbgl in dark brown fine grained sand fill, containing trace amounts of large rocks, plastic, terra cotta, concrete and brick;
- Plastic, brick, wood and metal were observed in surface fill in TP8, TP10 and TP12; and
- Test pit TP9 was terminated at excavator refusal in orange brown gravelly clay at approximately 0.5mbgl.

## 11.2 Laboratory Results

Laboratory results are summarised in Summary Table 1 (attached) and laboratory documentation is attached in Appendix F (note that analysis is included for test pits TP16 – TP22, which do not form part of this assessment).

JME2017 is attached in Appendix G.

Sampling locations are shown in Figures 3, 4 and 8.

The following analytes were not detected at concentrations above the laboratory LOR:

- Benzene;
- Toluene;
- Ethylbenzene;
- TRH F1;
- Naphthalene;
- OCP;
- OPP;
- PCB; and
- Mercury.

The following analytes were detected at concentrations above the laboratory LOR, but below adopted DGVs:

- PFOS (detected in the field triplicate sample)
- Xylenes;
- TRH F3 and F4;
- BaP;
- Chromium; and
- Nickel.

TRH were not detected at concentrations exceeding the laboratory LOR, with the exception of one sample from JME20005 TP9.

Heavy metals were detected in several samples in Lot 8, at concentrations which exceeded adopted DGVs. Observed exceedances included:

- Lead exceeded 250% of the adopted HIL in a surface sample collected from TP8. No other lead exceedances were observed;
- Zinc exceeded the adopted EIL in 17 samples from across Lot 8 with 10 samples exceeding the EIL by more than 250%. The ten samples were collected from test pits TP1, TP2, TP3, TP5, TP7, TP8, TP11, TP13 and TP14. as well as three samples from the fill mound on Lot 8 with two samples exceeding the EIL by more than 250%. Zinc exceeded the adopted EIL in a sample from hand auger HA2 on Lot 11.
- Copper exceeded the adopted EIL by more than 250% in five samples from test pits TP3, TP5, TP7, TP8 and TP13(see Figure 9);
- Arsenic exceeded adopted EILs by more than 250% in surface samples collected from TP5, TP7 and TP8, and arsenic exceeded adopted EIL in a sample collected from hand auger HA2 on Lot 11 (see Figure 10); and
- Cadmium exceeded adopted EILs in surface samples collected from TP5, TP7 and TP8.

Heavy metal DGV exceedances are summarised in Table 14 (below).

TABLE 13: TEST PIT OBSERVATIONS

| | Lithology | TP1 | TP2 | TP3 | TP4 | TP5 | TP6 | TP7 | TP8 | TP9 | TP10 | TP11 | TP12 | TP13 | TP14 | TP15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fill | Grey road base GRAVEL and gravelly SAND, grey brown to black, common plant roots | - | 0.5 | - | - | 0.2 | - | 0.1 | - | - | - | - | 0.3 | - | 0.2 | 0.25 |
| | Silty SAND, dark grey to black, fine grained, common plant roots | - | - | - | - | - | - | - | 0.2 | 0.15 | - | - | - | - | - | - |
| | Sandy clayey GRAVEL and gravelly CLAY, red brown, brown and yellow brown | - | - | - | - | - | - | 0.2 | - | 0.5 | 0.1 | 0.1 | 0.6 | 0.2 | - | 0.3 |
| | SAND, grey to dark grey brown to black, fine to medium grained | 1.6 | - | 0.4 | 0.5 | 0.4 | 0.8 | - | - | - | 0.4 | 0.4 | - | 0.4 | 0.4 | 0.6 |
| Natural | SAND, brown to orange brown to red brown, very fine to medium grained | - | 1.0 | 1.0 | 0.7 | 0.8 | 1.1 | 0.7 | 0.7 | - | 0.6 | 0.8 | 0.7 | 0.7 | 0.6 | 0.7 |

TABLE 14: HEAVY METAL DGV EXCEEDANCES

| Analyte | HIL | EIL | TP1 0 | TP1 1.6 | TP2 0.7 | TP3 0 | TP5 0 | TP7 0 | TP8 0 | TP9 0.3 | TP9 0.5 | TP10 0 | TP11 0 | TP11 0.2 | TP12 0.5 | HA2-1 | HA2-2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 3,000 | 160 | | | | | 900 | 940 | 1,000 | | | | | | | | 290 |
| Cadmium | 900 | 3 | | | | | 4.8 | 3.4 | 5.1 | | | | | | | | |
| Copper | 240,000 | 170 | | | | 680 | 1,700 | 2,100 | 2,400 | | | | | | | | |
| Lead | 1,500 | 2,000 | | | | | | | 4,200 | | | | | | | | |
| Zinc | 400,000 | 480 | 1,300 | 510 | 1,500 | 13,000 | 18,000 | 25,000 | 27,000 | 1,100 | 780 | 1,200 | 1,600 | 620 | 900 | 1,800 | |

| Analyte | HIL | EIL | TP13 0 | TP13 0.3 | TP13 0.5 | TP14 0.3 | QC3A | FM2 | FM3 |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 3,000 | 160 | | | | | | | |
| Cadmium | 900 | 3 | | | | | | | |
| Copper | 240,000 | 170 | | 520 | | | | | |
| Lead | 1,500 | 2,000 | | | | | | | |
| Zinc | 400,000 | 480 | 1,200 | 10,000 | 490 | 2,500 | 1,750 | 1,900 | 850 |

### 11.3 Statistical Analysis

Analytical results were assessed using the USEPA's ProUCL software package. The purpose of MBES2016 and MBES2017 was to facilitate the removal of 9,000m$^3$ of surface soils from Lot 11. The upper soils assessed in MBES2016 were likely to have been removed first and the deeper soils assessed in MBE2017 removed later. It is uncertain whether all of the soils assessed in MBES2017 were removed from all locations. Therefore, the results from MBES2017 were included in the data set along with results collected by JME this assessment. Observations were as follows:

- The SD of arsenic concentrations exceeded 50% of the DGV. When 'hot spot' results (where concentrations were >250% of the DGV) for samples TP5 0, TP7 0 and TP8 0 were removed from statistical analysis, the SD result satisfied the NEPM requirements for commercial/industrial land use (as discussed in Section 7.7);
- The SD of cadmium concentrations exceeded 50% of the DGV. When the two highest concentrations from TP5 and TP8 were removed from statistical analysis, the SD satisfied the NEPM requirements for commercial/industrial land use (as discussed in Section 7.7);
- The SD of copper concentrations exceeded 50% of the DGV, and the 95% UCL of the mean copper concentration exceeded the DGV. When 'hot spot' results from TP3, TP5, TP7, TP8 and TP13were removed from statistical analysis, the SD and 95% UCL results satisfied the NEPM requirements for commercial/industrial land use (as discussed in Section 7.7); and
- The SD of zinc concentrations exceeded 50% of the DGV, and the 95% UCL of the mean zinc concentration exceeded the DGV. When 'hot spot' results from TP3, TP5, TP 7, TP8 and TP13 were removed from statistical analysis, the SD and 95% UCL results satisfied the NEPM requirements for commercial/industrial land use (as discussed in Section 7.7).

The data sets and UCL calculation outputs are included in Appendix H.

## 12 DISCUSSION

Hydrocarbon contamination was not detected in samples collected from adjacent to the emulsion trench in Lot 11, indicating that significant contamination of soils in this area had not been caused by leaks from the trench.

The site was mostly flat, and divided into two parts. The western part of the site (Lot 11) was paved, and contained two large sheds, and some smaller buildings and water tanks. Beneath the pavement, brown gravelly sand, containing concrete and brick rubble to a depth of between 1mbgl and 1.8mbgl, was interpreted to be fill. This material had previously been assessed as meeting the criteria for excavated natural material, and for commercial/industrial land use. Approximately 9,000m$^3$ was removed from Lot 11 for the Medal Cables development. Light brown fine to medium grained sand beneath the fill was interpreted as representing in-situ, 'natural' material. Groundwater was intersected at 2.4mbgl. Hydrocarbon contamination was not detected in samples collected from adjacent to the hydrocarbon trench in Lot 11, indicating that significant contamination of soils in this area had not been caused by leaks from the trench.

The eastern part of the site (Lot 8) was unpaved, and sparsely covered with grass and other low vegetation. Fill mounds including concrete, metal and timber were observed, and concrete beams and concrete-filled tyres had been stockpiled in the northern part of Lot 8.

Fill, comprising brown to black sand, and containing some plastic, road base gravel, brick, concrete, metal and rocks, was observed to a depth of approximately 0.5 - 1mbgl across much of Lot 8. Elevated zinc and copper concentrations in this material were considered to be consistent with the use of sandblasting in the metal manufacturing process.

Beneath the fill, brown sand, interpreted as representing in-situ material, appeared to be largely uncontaminated.

Elevated arsenic, cadmium, copper, lead and zinc concentrations were observed in fill material on the surface in the northeast corner of the site. Elevated lead (4,600mg/kg) was limited to one location, test pit TP8. The lead concentration was more than 250% of adopted Human Health guideline value. Zinc contamination was higher along the northern and eastern borders of Lot 11 with the highest concentrations, 27,000mg/kg (TP8), 25,000mg/kg (TP7) and 18,000mg/kg (TP5), located at or near the lead impact location. Arsenic and copper were also detected at concentrations greater than 250% of the adopted ecological default guideline value at three locations, TP5, TP7 and TP8. Cadmium was detected at concentration less than 250% of the adopted ecological guidelines at the same locations.

# 13 CONCEPTUAL SITE MODEL

A Conceptual Site Model (CSM) has been prepared for the site, with reference to the NEPM Schedule B2, Guideline on Site Characterisation. The CSM identifies potential contaminant sources and COCs, contaminant release mechanisms, exposure pathways and potential receptors. The CSM is summarised in Table 15 (below).

## 13.1 Site History Summary

The site had been cleared for sand mining some time between 1954 and 1974. The site was used for steel and aluminium manufacturing from prior to 1987 to 2017. It was considered possible that sandblasting had taken place on the site, associated with the manufacture of metal products.

## 13.2 Site Description

Sampling locations are shown in Figure 8. Lot boundaries are shown in Figure 2.

Soils on the site were observed to comprise mostly sand. Fill, comprising brown to black sand, and containing some plastic, road base gravel, brick, concrete, metal and rocks, was observed to a depth of approximately 0.5 - 1mbgl across much of the site. Elevated zinc and copper concentrations in this material were considered to be consistent with the use of sandblasting in the metal manufacturing process.

It was considered possible that slag from the former Pasminco lead smelter had been deposited on the surface in limited areas of the site, particularly in the northeast.

Below the fill, grey brown sand was interpreted as being in-situ, natural material.

Groundwater was intersected at approximately 2.4mbgl in boreholes BH1 and BH2.

The western part of the site (Lot 11) was covered by concrete pavement (0.2m thick at BH1 and BH2), and underlain by sand which had been assessed as being suitable for ongoing industrial land use. A north-south concrete-lined trench, understood to have been used for emulsion storage, was observed in a large shed in the northwest corner of the site. Hydrocarbon contamination was not observed in samples collected from this area.

## 13.3 Source Zone Characteristics

### 13.3.1 Primary Contaminant Sources

JME considered potential sources of impact on the site to include:

- Use of the site for manufacture of metal products (potentially including sandblasting operations); and
- Potential importation of uncontrolled fill.

### 13.3.2 Identified Contaminants of Concern

Based on the results of this assessment, COCs on the site were considered to include heavy metals (arsenic, cadmium, copper, lead and zinc).

## 13.4 Areas of Environmental Concern

AECs on the site were considered to include fill across the site's surface.

## 13.5 Contaminant Transport Mechanisms

Primary transport mechanisms on the site were considered to include:

- Wind transport of fine surface material;
- Surface water flow; and
- Percolation of stormwater through permeable sediments into groundwater, and groundwater migration towards the Hunter River.

## 13.6 Contaminant Exposure Pathways

For contaminated soil to pose a risk to a receptor, a complete exposure pathway must exist between the source of impact and the receptor. A complete exposure pathway consists of the following elements:

- A source and mechanism for release;
- A storage and/or transport medium (e.g. contaminants stored in fine soil types and transported into the atmosphere as dust);
- An exposure point, where the receptor comes in contact with the contamination; and
- An exposure route (e.g. inhalation).

Potential exposure pathways on the site were considered to include:

- Metabolisation by the local ecology;
- Dermal contact, incidental ingestion and inhalation of dust by workers on the site and neighbouring premises; and
- Off-site migration of groundwater potentially impacting hydraulically down-gradient surface water users and ecology.

## 13.7 Identification of Receptors at Risk

Potential receptors were considered to include:

- Current and future workers and visitors to the site;
- Local ecology;
- Groundwater; and
- Down-gradient surface water (Hunter River) users and ecology.

TABLE 15: CONCEPTUAL SITE MODEL 21D and 21F SCHOOL DRIVE TOMAGO

| Known and Potential Primary Sources | Contaminants of Concern | Potentially Impacted Media | Transport Mechanism | Exposure Pathways | Potential Receptors |
|---|---|---|---|---|---|
| Fill used to level site<br>Previous metalworking operations | Heavy metals | Soil<br>Air<br>Ground and surface water | Surface water<br>Groundwater<br>Wind | Metabolisation<br>Dermal contact<br>Inhalation<br>Ingestion | Site and neighbouring workers<br>Ecology |

# 14 CONCLUSION AND RECOMMENDATIONS

Based on this assessment, it was considered that the site had been impacted by contamination comprising heavy metals at concentrations exceeding guideline values for commercial/ industrial land use. JME considers the impact to be minor and that the site could meet the environmental requirements for commercial/industrial land use subject to the development and successful implementation of an appropriate Remedial Action Plan.

# REFERENCES

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Google Earth

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Port Stephens Local Environmental Plan

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# LIMITATIONS

This report was prepared for Remondis with the objective of assessing the presence of potential contamination on the site that could impact on the future development of the site. The report is not intended for other parties or other uses. No warranty, expressed or implied, is made as to the information and professional advice included in this report. Anyone using this document does so at their own risk and should satisfy themselves concerning its applicability and, where necessary, should seek expert advice in relation to the particular situation at the time.

In preparing this report, current guidelines for the assessment and management of contaminated land were followed. This work has been conducted in good faith, in accordance with JME's understanding of the client's brief, and general accepted practice for environmental consulting. The findings within this report are the result of discrete/specific sampling practices used in accordance with normal practices and standards. To the best of JME's knowledge, they represent a reasonable interpretation of the general conditions of the site. Under no circumstances, however, can it be considered that these findings represent the actual state of the site at all points. It is the nature of contaminated site investigations that the degree of variability in site conditions cannot be known completely, and no sampling and analysis program can eliminate all uncertainty concerning the condition of the site. Professional judgement must be exercised in the collection and interpretation of data.

It was considered possible that groundwater had been contaminated via previous activities on the site; however, at this stage Remondis has requested soil sampling only be undertaken.

This report does not contain geotechnical information and should not be used for geotechnical purposes.

# Summary Tables

**Summary Table 1**
Laboratory Analysis
VOC/TRH/PAH/8 HM/OCP/PCB/pH/CEC

| | | Adopted | Origin of | Sample ID | TP1 1m | TP1 2m | TP2 1m | TP2 2m | TP3 1m | TP3 2m | TP4 1m | TP4 2m | TP5 1m | TP5 2m | TP6 1m | TP6 2m | TP7 1m | TP7 2m | TP8 1m | TP8 2m | TP9 1m | TP9 2m | TP10 1m | TP10 2m | TP11 1m | TP11 2m | TP12 1m | TP12 2m | TP13 1m | TP13 2m | TP14 1m | TP14 2m | TP15 1m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 |
| | | | | Matrix | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil |
| **Analyte Name** | **Units** | **DGV** | **DGV** | **LOR** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| Benzene | mg/kg | 3 | 2 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 135 | 7 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 165 | 7 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Total Xylenes | mg/kg | 180 | 7 | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total VOC | mg/kg | - | - | 24 | 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. | 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. |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 215 | 7 | 25 | 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. | 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. |
| TRH >C10-C16 | mg/kg | 170 | 7 | 25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 1700 | 7 | 90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 3300 | 7 | 120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 |
| Naphthalene | mg/kg | 370 | 6 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)pyrene | mg/kg | 172 | 9 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Carcinogenic PAHs, BaP TEQ | TEQ (mg/kg) | 40 | 1 | 0.3 | 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. | 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. |
| Total PAH | mg/kg | 4000 | 1 | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| DDT | mg/kg | 640 | 6 | 0.2 | 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. | 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. |
| DDT+DDE+DDD | mg/kg | 3600 | 1 | 0.6 | 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. | 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. |
| Aldrin and Dieldrin | mg/kg | 45 | 1 | 0.3 | 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. | 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. |
| Chlordane | mg/kg | 530 | 1 | 0.2 | 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. | 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. |
| Endosulfan | mg/kg | 2000 | 1 | 0.5 | 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. | 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. |
| Hexachlorobenzene (HCB) | mg/kg | 80 | 1 | 0.1 | 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. | 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. |
| Heptachlor | mg/kg | 50 | 1 | 0.2 | 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. | 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. |
| Endrin | mg/kg | 100 | 1 | 0.2 | 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. | 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. |
| Methoxychlor | mg/kg | 2500 | 1 | 0.1 | 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. | 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. |
| Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 2000 | 1 | 0.2 | 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. | 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. |
| Total OP Pesticides | mg/kg | - | - | 1.7 | 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. | 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. |
| Total PCBs (Arochlors) | mg/kg | 7 | 1 | 1 | 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. | 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. |
| Phenol | mg/kg | 240000 | 1 | 0.5 | 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. | 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. |
| Cresols | mg/kg | 25000 | 1 | 1.5 | 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. | 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. |
| Arsenic, As | mg/kg | 160 | 6 | 1 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 3 | 8 | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 330 | 5 | 0.5 | **2.1** | **1.9** | **1.1** | **1.8** | **1.5** | **1.1** | **1.1** | **1.1** | **1.6** | **0.7** | **1.5** | **1.0** | **17** | **9.1** | **1.8** | **2.0** | **1.4** | **1.8** | **2.3** | **2.2** | **2.3** | **2.7** | **1.6** | **1.1** | **1.2** | **1.2** | **1.1** | **1.3** |
| Copper, Cu | mg/kg | 170 | 4 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | **9.7** | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | **1.5** | **2.6** | **0.5** | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1500 | 1 | 1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | **1** | <1 | <1 | <1 | **12** | **3** | <1 | <1 | <1 | <1 | <1 | **1** | **2** | **3** | **1** | <1 | <1 | <1 | <1 | <1 |
| Nickel, Ni | mg/kg | 60 | 5 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | **4.3** | **0.6** | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | **0.6** | **0.9** | **1.5** | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 480 | 3 | 1 | **1** | **1** | **1** | **8** | **4** | **2** | **1** | **1** | **6** | **5** | **1** | **23** | **170** | **4** | **3** | **1** | **1** | **3** | **12** | **25** | **46** | **67** | **6** | **2** | **2** | **2** | **1** | **1** | **2** |
| Mercury | mg/kg | 1 | 8 | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| pH | pH Units | - | - | | **6.8** | **6.2** | **5.2** | **6.5** | **6.3** | **6.4** | **6.1** | **5.9** | **5.9** | **6.0** | **6.6** | **6.3** | **6.8** | **6.2** | **6.7** | **6.3** | **7.1** | **5.8** | **4.7** | **5.6** | **7.6** | **8.2** | **6.4** | **6.6** | **5.9** | **5.9** | **6.0** | **5.8** | **5.8** |
| Cation Exchange Capacity | meq/100g | - | - | | 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. | 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. |

EILs are based on soil pH of 7.0 and CEC of 0.79meq/100g

Unless otherwise specified, referred tables are within the National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999 (amended 2013) Schedule B1, Guideline on Investigation Levels for Soil and Groundwater.

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|---|---|
| 1 | Table 1A(1) Health investigation levels for soil contaminants (D - commercial/industrial). |
| 2 | Table 1A(3) Soil HSLs for vapour intrusion (HSL D - commercial/industrial) 0m to <1m |
| 3 | Table 1B(1) Soil-specific added contaminant limits for aged zinc in soil (Commercial/industrial) |
| 4 | Table 1B(2) Soil-specific added contaminant limits for aged copper in soils (Commercial/industrial) |
| 5 | Table 1B(3) Soil-specific added contaminant limits for aged chromium III and nickel in soil (Commercial/industrial) |
| 6 | Table 1B(5) Generic EILs for aged As, fresh DDT and fresh naphthalene in soils irrespective of their physicochemical properties (Commercial/industrial) |
| 7 | Table 1B(6) ESLs for TPH fractions F1 – F4, BTEX and benzo(a)pyrene in soil (Commercial/industrial) mst conservative value from fine or coarse grained soil. |
| 8 | NSW DEC. (2006). Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd Edition). Department of Environment and Conservation NSW, Sydney Appendix II Column 5 |
| 9 | CRC CARE Technical Report No. 39 'Risk-based management and remediation guidance for benzo(a)pyrene' |

| | |
|---|---|
| **1800** | Exceeds 50% of the adopted human health assessment criterion |
| **1800** | Exceeds the adopted human health assessment criterion |
| **1800** | Exceeds 250% of the adopted human health assessment criterion |
| 1800 | Exceeds 50% of the adopted ecological assessment criterion |
| 1800 | Exceeds the adopted ecological assessment criterion |
| 1800 | Exceeds 250% of the adopted ecological assessment criterion |

**Summary Table 1**
Laboratory Analysis
VOC/TRH/PAH/8 HM/OCP/PCB/pH/CEC

| Analyte Name | Units | Adopted DGV | Origin of Adopted DGV | Sample ID | TP15 2m | TP16 1m | TP16 2m | TP17 1m | TP17 2m | TP18 1m | TP18 2m | TP19 1m | TP19 2m | TP20 1m | TP20 2m | TP21 1m | TP21 2m | TP22 1m | TP22 2m | TP23 1m | TP23 2m | TP24 1m | TP24 2m | TP25 1m | TP25 2m | TP26 1m | TP26 2m | TP27 1m | TP27 2m | TP28 1m | TP28 2m | TP29 1m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 |
| | | | | Matrix | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil |
| | | | | LOR | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| Benzene | mg/kg | 3 | 2 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 135 | 7 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 165 | 7 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Total Xylenes | mg/kg | 180 | 7 | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total VOC | mg/kg | - | - | 24 | 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. | 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. |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 215 | 7 | 25 | 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. | 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. |
| TRH >C10-C16 | mg/kg | 170 | 7 | 25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 1700 | 7 | 90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 3300 | 7 | 120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 |
| Naphthalene | mg/kg | 370 | 6 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)pyrene | mg/kg | 172 | 9 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Carcinogenic PAHs, BaP TEQ | TEQ (mg/kg) | 40 | 1 | 0.3 | 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. | 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. |
| Total PAH | mg/kg | 4000 | 1 | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| DDT | mg/kg | 640 | 6 | 0.2 | 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. | 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. |
| DDT+DDE+DDD | mg/kg | 3600 | 1 | 0.6 | 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. | 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. |
| Aldrin and Dieldrin | mg/kg | 45 | 1 | 0.3 | 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. | 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. |
| Chlordane | mg/kg | 530 | 1 | 0.2 | 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. | 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. |
| Endosulfan | mg/kg | 2000 | 1 | 0.5 | 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. | 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. |
| Hexachlorobenzene (HCB) | mg/kg | 80 | 1 | 0.1 | 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. | 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. |
| Heptachlor | mg/kg | 50 | 1 | 0.2 | 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. | 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. |
| Endrin | mg/kg | 100 | 1 | 0.2 | 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. | 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. |
| Methoxychlor | mg/kg | 2500 | 1 | 0.1 | 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. | 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. |
| Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 2000 | 1 | 0.2 | 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. | 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. |
| Total OP Pesticides | mg/kg | - | - | 1.7 | 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. | 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. |
| Total PCBs (Arochlors) | mg/kg | 7 | 1 | 1 | 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. | 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. |
| Phenol | mg/kg | 240000 | 1 | 0.5 | 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. | 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. |
| Cresols | mg/kg | 25000 | 1 | 1.5 | 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. | 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. |
| Arsenic, As | mg/kg | 160 | 6 | 1 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 3 | 8 | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 330 | 5 | 0.5 | **1.2** | **1.1** | **1.6** | **1.4** | **0.8** | **2.5** | **6.1** | **4.6** | **1.9** | **1.0** | **1.8** | **1.3** | **1.4** | **0.7** | **2.0** | **2.4** | **2.0** | **1.6** | **1.9** | **1.7** | **1.7** | **1.6** | **1.1** | **1.7** | **1.4** | **1.9** | **1.7** | **2.5** |
| Copper, Cu | mg/kg | 170 | 4 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | **0.5** | **1.3** | **5.9** | **1.3** | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | **1.1** | **1.4** | <0.5 | **1.0** | <0.5 | <0.5 | **1.1** | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1500 | 1 | 1 | <1 | <1 | <1 | **1** | <1 | **1** | **4** | **7** | **2** | <1 | <1 | <1 | <1 | <1 | **2** | **3** | **1** | **2** | **1** | <1 | **2** | <1 | <1 | <1 | <1 | **1** | **1** | <1 |
| Nickel, Ni | mg/kg | 60 | 5 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | **0.6** | **3.3** | **0.9** | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | **0.5** | **1.0** | **0.6** | <0.5 | **0.6** | **0.7** | <0.5 | **0.6** | <0.5 | **0.8** | <0.5 | **0.6** | <0.5 | **0.8** |
| Zinc, Zn | mg/kg | 480 | 3 | 1 | **1** | **1** | **1** | **50** | **12** | **24** | **50** | **140** | **29** | **1** | **2** | **2** | **1** | **2** | **42** | **120** | **12** | **21** | **13** | **7** | **30** | **3** | **8** | **8** | **7** | **56** | **34** | **35** |
| Mercury | mg/kg | 1 | 8 | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| pH | pH Units | - | - | | **5.6** | **5.1** | **6.1** | **6.5** | **6.6** | **6.8** | **6.7** | **6.9** | **6.6** | **4.9** | **4.5** | **5.8** | **5.9** | **5.8** | **6.1** | **6.3** | **6.0** | **6.3** | **6.4** | **6.7** | **6.7** | **5.7** | **5.7** | **6.4** | **5.3** | **6.0** | **6.2** | **6.0** |
| Cation Exchange Capacity | meq/100g | - | - | | 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. | 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. |

EILs are based on soil pH of 7.0 and CEC of 0.79meq/100g

Unless otherwise specified, referred tables are within the National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999 (amended 2013) Schedule B1, Guideline on Investigation Levels for Soil and Groundwater.

| | |
|---|---|
| 1 | Table 1A(1) Health investigation levels for soil contaminants (D - commercial/industrial). |
| 2 | Table 1A(3) Soil HSLs for vapour intrusion (HSL D - commercial/industrial) 0m to <1m |
| 3 | Table 1B(1) Soil-specific added contaminant limits for aged zinc in soil (Commercial/industrial) |
| 4 | Table 1B(2) Soil-specific added contaminant limits for aged copper in soils (Commercial/industrial) |
| 5 | Table 1B(3) Soil-specific added contaminant limits for aged chromium III and nickel in soil (Commercial/industrial) |
| 6 | Table 1B(5) Generic EILs for aged As, fresh DDT and fresh naphthalene in soils irrespective of their physicochemical properties (Commercial/industrial) |
| 7 | Table 1B(6) ESLs for TPH fractions F1 – F4, BTEX and benzo(a)pyrene in soil (Commercial/industrial) mst conservative value from fine or coarse grained soil. |
| 8 | NSW DEC. (2006). Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd Edition). Department of Environment and Conservation NSW, Sydney Appendix II Column 5 |
| 9 | CRC CARE Technical Report No. 39 'Risk-based management and remediation guidance for benzo(a)pyrene' |

| | |
|---|---|
| **1800** | Exceeds 50% of the adopted human health assessment criterion |
| **1800** | Exceeds the adopted human health assessment criterion |
| **1800** | Exceeds 250% of the adopted human health assessment criterion |
| 1800 | Exceeds 50% of the adopted ecological assessment criterion |
| 1800 | Exceeds the adopted ecological assessment criterion |
| 1800 | Exceeds 250% of the adopted ecological assessment criterion |

**Summary Table 1**
Laboratory Analysis
VOC/TRH/PAH/8 HM/OCP/PCB/pH/CEC

| | | Adopted | Origin of Adopted | Sample ID | TP29 2m | TP30 1m | TP30 2m | TP31 1m | TP31 2m | TP31 3m | TP32 1m | TP32 2m | TP33 1m | TP33 2m | TP34 1m | TP34 2m | TP35 1m | TP35 2m | BH1 1-1.1 | BH1 2-4.2.5 | BH2 1-1.45 | BH2 2-2.45 | TP1 0 | TP1 1.6 | TP2 0 | TP2 0.7 | TP3 0 | TP3 0.55 | TP4 0 | TP4 0.7 | TP5 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 |
| | | | | Matrix | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil |
| **Analyte Name** | **Units** | **DGV** | **DGV** | **LOR** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| Benzene | mg/kg | 3 | 2 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 135 | 7 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 165 | 7 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Total Xylenes | mg/kg | 180 | 7 | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total VOC | mg/kg | - | - | 24 | 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. | <24 | <24 | N.A. | N.A. | <24 | N.A. | N.A. | N.A. | N.A. | N.A. | <24 | N.A. |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 215 | 7 | 25 | 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. | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 |
| TRH >C10-C16 | mg/kg | 170 | 7 | 25 | <25 | <25 | <25 | <25 | <25 | N.A. | <25 | <25 | <25 | <25 | **52** | 490 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 1700 | 7 | 90 | <90 | <90 | <90 | <90 | <90 | N.A. | <90 | <90 | <90 | <90 | **580** | **1400** | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 3300 | 7 | 120 | <120 | <120 | <120 | <120 | <120 | N.A. | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 |
| Naphthalene | mg/kg | 370 | 6 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | N.A. | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)pyrene | mg/kg | 172 | 9 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | **0.2** | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | **0.2** |
| Carcinogenic PAHs, BaP TEQ | TEQ (mg/kg) | 40 | 1 | 0.3 | 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. | <0.3 | <0.3 | <0.3 | <0.3 | **0.3** | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | **0.3** |
| Total PAH | mg/kg | 4000 | 1 | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | **1.7** | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | **1.3** |
| DDT | mg/kg | 640 | 6 | 0.2 | 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. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. |
| DDT+DDE+DDD | mg/kg | 3600 | 1 | 0.6 | 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. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.6 | N.A. | <0.6 | N.A. | N.A. | N.A. | N.A. |
| Aldrin and Dieldrin | mg/kg | 45 | 1 | 0.3 | 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. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.3 | N.A. | <0.3 | N.A. | N.A. | N.A. | N.A. |
| Chlordane | mg/kg | 530 | 1 | 0.2 | 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. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. |
| Endosulfan | mg/kg | 2000 | 1 | 0.5 | 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. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. | N.A. | N.A. |
| Hexachlorobenzene (HCB) | mg/kg | 80 | 1 | 0.1 | 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. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | N.A. | <0.1 | N.A. | N.A. | N.A. | N.A. |
| Heptachlor | mg/kg | 50 | 1 | 0.2 | 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. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. |
| Endrin | mg/kg | 100 | 1 | 0.2 | 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. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. |
| Methoxychlor | mg/kg | 2500 | 1 | 0.1 | 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. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | N.A. | <0.1 | N.A. | N.A. | N.A. | N.A. |
| Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 2000 | 1 | 0.2 | 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. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. |
| Total OP Pesticides | mg/kg | - | - | 1.7 | 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. | N.A. | N.A. | N.A. | N.A. | N.A. | <1.7 | N.A. | <1.7 | N.A. | N.A. | N.A. | N.A. |
| Total PCBs (Arochlors) | mg/kg | 7 | 1 | 1 | 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. | N.A. | N.A. | N.A. | N.A. | N.A. | <1 | N.A. | <1 | N.A. | N.A. | N.A. | N.A. |
| Phenol | mg/kg | 240000 | 1 | 0.5 | 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. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. | N.A. | N.A. |
| Cresols | mg/kg | 25000 | 1 | 1.5 | 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. | N.A. | N.A. | N.A. | N.A. | N.A. | <1.5 | N.A. | <1.5 | N.A. | N.A. | N.A. | N.A. |
| Arsenic, As | mg/kg | 160 | 6 | 1 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | **2** | **2** | <1 | <1 | **6** | **80** | **6** | **7** | **100** | <1 | **3** | <1 | 900 |
| Cadmium, Cd | mg/kg | 3 | 8 | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | **0.3** | <0.3 | <0.3 | **1.2** | <0.3 | <0.3 | <0.3 | 4.8 |
| Chromium, Cr | mg/kg | 330 | 5 | 0.5 | **2.7** | **2.4** | **1.5** | **2.2** | **2.3** | **3.0** | **2.0** | **1.3** | **2.1** | **2.7** | **4.1** | **1.3** | **1.4** | **2.4** | **4.0** | **1.0** | **5.7** | **2.2** | **42** | **11** | **3.6** | **8.2** | **31** | **1.7** | **7.3** | **1.4** | **61** |
| Copper, Cu | mg/kg | 170 | 4 | 0.5 | **1.8** | <0.5 | <0.5 | <0.5 | <0.5 | **1.0** | <0.5 | <0.5 | <0.5 | **0.6** | **1.2** | <0.5 | <0.5 | **3.4** | **6.8** | **1.2** | **4.2** | **0.9** | **56** | **53** | **11** | **67** | 680 | **1.3** | **22** | **2.8** | 1700 |
| Lead, Pb | mg/kg | 1500 | 1 | 1 | **3** | **1** | <1 | <1 | <1 | **2** | <1 | <1 | <1 | **2** | **5** | <1 | <1 | **6** | **6** | <1 | **4** | <1 | **70** | **33** | **9** | **120** | **840** | **2** | **34** | **4** | **940** |
| Nickel, Ni | mg/kg | 60 | 5 | 0.5 | **0.6** | **0.6** | <0.5 | <0.5 | **0.5** | **0.8** | <0.5 | <0.5 | <0.5 | **0.6** | **0.6** | <0.5 | <0.5 | **0.7** | **8.2** | **0.9** | **4.5** | **0.5** | **17** | **11** | **9.8** | **4.1** | **4.8** | <0.5 | **7.1** | **0.9** | **52** |
| Zinc, Zn | mg/kg | 480 | 3 | 1 | **140** | **24** | **24** | **34** | **4** | **66** | **2** | **5** | **92** | **190** | 660 | **13** | **2** | **110** | **57** | <2 | **61** | **4.0** | 1300 | 510 | **74** | 1500 | 13000 | **33** | **400** | **59** | 18000 |
| Mercury | mg/kg | 1 | 8 | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| pH | pH Units | - | - | | **5.9** | **6.2** | **6.5** | **6.7** | **6.8** | **7.2** | **6.0** | **5.8** | **6.4** | **6.5** | **6.4** | **6.3** | **6.2** | **7.5** | **8.8** | 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. |
| Cation Exchange Capacity | meq/100g | - | - | | 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. | **3.6** | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. |

EILs are based on soil pH of 7.0 and CEC of 0.79meq/100g

Unless otherwise specified, referred tables are within the National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999 (amended 2013) Schedule B1, Guideline on Investigation Levels for Soil and Groundwater.

| | |
|---|---|
| 1 | Table 1A(1) Health investigation levels for soil contaminants (D - commercial/industrial). |
| 2 | Table 1A(3) Soil HSLs for vapour intrusion (HSL D - commercial/industrial) 0m to <1m |
| 3 | Table 1B(1) Soil-specific added contaminant limits for aged zinc in soil (Commercial/industrial) |
| 4 | Table 1B(2) Soil-specific added contaminant limits for aged copper in soils (Commercial/industrial) |
| 5 | Table 1B(3) Soil-specific added contaminant limits for aged chromium III and nickel in soil (Commercial/industrial) |
| 6 | Table 1B(5) Generic EILs for aged As, fresh DDT and fresh naphthalene in soils irrespective of their physicochemical properties (Commercial/industrial) |
| 7 | Table 1B(6) ESLs for TPH fractions F1 – F4, BTEX and benzo(a)pyrene in soil (Commercial/industrial) mst conservative value from fine or coarse grained soil. |
| 8 | NSW DEC. (2006). Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd Edition). Department of Environment and Conservation NSW, Sydney Appendix II Column 5 |
| 9 | CRC CARE Technical Report No. 39 'Risk-based management and remediation guidance for benzo(a)pyrene' |

| | |
|---|---|
| **1800** | Exceeds 50% of the adopted human health assessment criterion |
| **1800** | Exceeds the adopted human health assessment criterion |
| **1800** | Exceeds 250% of the adopted human health assessment criterion |
| 1800 | Exceeds 50% of the adopted ecological assessment criterion |
| 1800 | Exceeds the adopted ecological assessment criterion |
| 1800 | Exceeds 250% of the adopted ecological assessment criterion |

**Summary Table 1**
Laboratory Analysis
VOC/TRH/PAH/8 HM/OCP/PCB/pH/CEC

| | | Adopted | Origin of | Sample ID | TP5 0.5 | TP6 1 | TP7 0 | TP7 0.6 | TP8 0 | TP8 0.7 | TP9 0.3 | TP9 0.5 | TP10 0 | TP10 0.3 | TP10 0.6 | TP11 0 | TP11 0.2 | TP11 0.5 | TP12 0 | TP12 0.5 | TP12 0.7 | TP13 0 | TP13 0.3 | TP13 0.5 | TP14 0.3 | TP14 0.5 | TP15 0 | TP15 0.5 | HA1-3 | HA2-1 | HA2-2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 6/4/2020 | 11/6/2021 | 3/06/2021 | 3/06/2021 |
| | | | | Matrix | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil |
| **Analyte Name** | **Units** | **DGV** | **DGV** | **LOR** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| Benzene | mg/kg | 3 | 2 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 135 | 7 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 165 | 7 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Total Xylenes | mg/kg | 180 | 7 | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | **0.4** | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total VOC | mg/kg | - | - | 24 | N.A. | <24 | N.A. | N.A. | N.A. | N.A. | N.A. | <24 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <24 | N.A. | N.A. | <24 | N.A. | N.A. | N.A. | <24 | N.A. | N.A. | N.A. | N.A. |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 215 | 7 | 25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 |
| TRH >C10-C16 | mg/kg | 170 | 7 | 25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 1700 | 7 | 90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 3300 | 7 | 120 | <120 | <120 | <120 | <120 | <120 | <120 | **180** | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 | <120 |
| Naphthalene | mg/kg | 370 | 6 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)pyrene | mg/kg | 172 | 9 | 0.1 | <0.1 | <0.1 | **0.2** | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | **0.4** | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Carcinogenic PAHs, BaP TEQ | TEQ (mg/kg) | 40 | 1 | 0.3 | <0.3 | <0.3 | **0.3** | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | **0.6** | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total PAH | mg/kg | 4000 | 1 | 0.8 | <0.8 | <0.8 | **1.3** | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | **3.7** | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| DDT | mg/kg | 640 | 6 | 0.2 | N.A. | N.A. | <0.2 | <0.2 | N.A. | N.A. | <0.2 | N.A. | N.A. | <0.2 | <0.2 | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. |
| DDT+DDE+DDD | mg/kg | 3600 | 1 | 0.6 | N.A. | N.A. | <0.6 | <0.6 | N.A. | N.A. | <0.6 | N.A. | N.A. | <0.6 | <0.6 | N.A. | <0.6 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.6 | N.A. | N.A. | N.A. | N.A. |
| Aldrin and Dieldrin | mg/kg | 45 | 1 | 0.3 | N.A. | N.A. | <0.3 | <0.3 | N.A. | N.A. | <0.3 | N.A. | N.A. | <0.3 | <0.3 | N.A. | <0.3 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.3 | N.A. | N.A. | N.A. | N.A. |
| Chlordane | mg/kg | 530 | 1 | 0.2 | N.A. | N.A. | <0.2 | <0.2 | N.A. | N.A. | <0.2 | N.A. | N.A. | <0.2 | <0.2 | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. |
| Endosulfan | mg/kg | 2000 | 1 | 0.5 | N.A. | N.A. | <0.5 | <0.5 | N.A. | N.A. | <0.5 | N.A. | N.A. | <0.5 | <0.5 | N.A. | <0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | N.A. | N.A. | N.A. | N.A. |
| Hexachlorobenzene (HCB) | mg/kg | 80 | 1 | 0.1 | N.A. | N.A. | <0.1 | <0.1 | N.A. | N.A. | <0.1 | N.A. | N.A. | <0.1 | <0.1 | N.A. | <0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | N.A. | N.A. | N.A. | N.A. |
| Heptachlor | mg/kg | 50 | 1 | 0.2 | N.A. | N.A. | <0.2 | <0.2 | N.A. | N.A. | <0.2 | N.A. | N.A. | <0.2 | <0.2 | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. |
| Endrin | mg/kg | 100 | 1 | 0.2 | N.A. | N.A. | <0.2 | <0.2 | N.A. | N.A. | <0.2 | N.A. | N.A. | <0.2 | <0.2 | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. |
| Methoxychlor | mg/kg | 2500 | 1 | 0.1 | N.A. | N.A. | <0.1 | <0.1 | N.A. | N.A. | <0.1 | N.A. | N.A. | <0.1 | <0.1 | N.A. | <0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | N.A. | N.A. | N.A. | N.A. |
| Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 2000 | 1 | 0.2 | N.A. | N.A. | <0.2 | <0.2 | N.A. | N.A. | <0.2 | N.A. | N.A. | <0.2 | <0.2 | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | N.A. | N.A. | N.A. |
| Total OP Pesticides | mg/kg | - | - | 1.7 | N.A. | N.A. | <1.7 | <1.7 | N.A. | N.A. | <1.7 | N.A. | N.A. | <1.7 | <1.7 | N.A. | <1.7 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <1.7 | N.A. | N.A. | N.A. | N.A. |
| Total PCBs (Arochlors) | mg/kg | 7 | 1 | 1 | N.A. | N.A. | <1 | <1 | N.A. | N.A. | <1 | N.A. | N.A. | <1 | <1 | N.A. | <1 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <1 | N.A. | N.A. | N.A. | N.A. |
| Phenol | mg/kg | 240000 | 1 | 0.5 | N.A. | N.A. | <0.5 | <0.5 | N.A. | N.A. | <0.5 | N.A. | N.A. | <0.5 | <0.5 | N.A. | <0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | N.A. | N.A. | N.A. | N.A. |
| Cresols | mg/kg | 25000 | 1 | 1.5 | N.A. | N.A. | <1.5 | <1.5 | N.A. | N.A. | <1.5 | N.A. | N.A. | <1.5 | <1.5 | N.A. | <1.5 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <1.5 | N.A. | N.A. | N.A. | N.A. |
| Arsenic, As | mg/kg | 160 | 6 | 1 | **1** | <1 | 940 | **2** | 1000 | <1 | **24** | **6** | **27** | <1 | **1** | **12** | <1 | <1 | **3** | **29** | <1 | **17** | **100** | **4** | **11** | <1 | **4** | **1** | **2** | **16** | 290 |
| Cadmium, Cd | mg/kg | 3 | 8 | 0.3 | <0.3 | <0.3 | 3.4 | <0.3 | 5.1 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | **0.9** | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | **0.4** | **3.2** |
| Chromium, Cr | mg/kg | 330 | 5 | 0.5 | **0.6** | **1.4** | **72** | **3.9** | **37** | **2.8** | **7.9** | **6** | **6.7** | **1.8** | **4.7** | **13** | **3.9** | **1.9** | **8.2** | **7.8** | **1.9** | **11** | **27** | **3.1** | **18** | **2.9** | **5.8** | **11.0** | **8.0** | **110** | **6.0** |
| Copper, Cu | mg/kg | 170 | 4 | 0.5 | **3.7** | **0.9** | 2100 | **18** | 2400 | **11** | **40** | **41** | **71** | **11** | **21** | **66** | **4.0** | **1.0** | **13** | **55** | **3.5** | **66** | 520 | **25** | **65** | **0.8** | **14** | **2** | **8** | **62** | **170** |
| Lead, Pb | mg/kg | 1500 | 1 | 1 | **5** | **2** | **1100** | **33** | 4200 | **18** | **46** | **60** | **83** | **12** | **36** | **83** | **6** | <1 | **25** | **71** | **6** | **75** | **1100** | **62** | **120** | **2** | **27** | **17** | **8** | **66** | **33** |
| Nickel, Ni | mg/kg | 60 | 5 | 0.5 | <0.5 | <0.5 | **38** | **0.8** | **26** | <0.5 | **6.3** | **7.5** | **10** | <0.5 | **0.7** | **11** | <0.5 | <0.5 | **3.7** | **8.4** | **0.8** | **16** | **5.1** | <0.5 | **1.4** | <0.5 | **2.7** | **0.8** | **3.0** | **15** | **6.4** |
| Zinc, Zn | mg/kg | 480 | 3 | 1 | **65** | **56** | 25000 | **430** | 27000 | **170** | 1100 | 780 | 1200 | **170** | **430** | 1600 | 620 | **30** | **370** | 900 | **69** | 1200 | 10000 | 490 | 2500 | **170** | **400** | **480** | **150** | 1800 | **6.4** |
| Mercury | mg/kg | 1 | 8 | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| pH | pH Units | - | - | | N.A. | N.A. | N.A. | N.A. | **7.7** | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | **8.8** | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | **8.0** | N.A. | N.A. | N.A. | N.A. | N.A. |
| Cation Exchange Capacity | meq/100g | - | - | | N.A. | N.A. | N.A. | N.A. | **0.79** | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | **13** | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | **1.5** | N.A. | N.A. | N.A. | N.A. | N.A. |

EILs are based on soil pH of 7.0 and CEC of 0.79meq/100g

Unless otherwise specified, referred tables are within the National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999 (amended 2013) Schedule B1, Guideline on Investigation Levels for Soil and Groundwater.

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| 2 | Table 1A(3) Soil HSLs for vapour intrusion (HSL D - commercial/industrial) 0m to <1m |
| 3 | Table 1B(1) Soil-specific added contaminant limits for aged zinc in soil (Commercial/industrial) |
| 4 | Table 1B(2) Soil-specific added contaminant limits for aged copper in soils (Commercial/industrial) |
| 5 | Table 1B(3) Soil-specific added contaminant limits for aged chromium III and nickel in soil (Commercial/industrial) |
| 6 | Table 1B(5) Generic EILs for aged As, fresh DDT and fresh naphthalene in soils irrespective of their physicochemical properties (Commercial/industrial) |
| 7 | Table 1B(6) ESLs for TPH fractions F1 – F4, BTEX and benzo(a)pyrene in soil (Commercial/industrial) mst conservative value from fine or coarse grained soil. |
| 8 | NSW DEC. (2006). Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd Edition). Department of Environment and Conservation NSW, Sydney Appendix II Column 5 |
| 9 | CRC CARE Technical Report No. 39 'Risk-based management and remediation guidance for benzo(a)pyrene' |

| | |
|---|---|
| **1800** | Exceeds 50% of the adopted human health assessment criterion |
| **1800** | Exceeds the adopted human health assessment criterion |
| **1800** | Exceeds 250% of the adopted human health assessment criterion |
| 1800 | Exceeds 50% of the adopted ecological assessment criterion |
| 1800 | Exceeds the adopted ecological assessment criterion |
| 1800 | Exceeds 250% of the adopted ecological assessment criterion |

**Summary Table 1**
Laboratory Analysis
VOC/TRH/PAH/8 HM/OCP/PCB/pH/CEC

| Analyte Name | Units | Adopted DGV | Origin of Adopted DGV | Sample ID | HA2-3 | HA3-1 | HA3-2 | HA4-0 | HA4-1 | HA4-2 | MW10-1 | MW10-2 | MW10-3 | FM1 | FM2 | FM3 | Maximum Concentration | Standard Deviation | 95% UCL of Mean Concentration |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 11/06/2021 | 11/06/2021 | 11/06/2021 | 11/06/2021 | 11/06/2021 | 11/06/2021 | 3/06/2021 | 3/06/2021 | 3/06/2021 | 3/06/2021 | 3/06/2021 | 3/06/2021 | | | |
| | | | | Matrix | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | | | |
| | | | | LOR | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | | | |
| Benzene | mg/kg | 3 | 2 | 0.1 | <0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | <0.1 | <0.1 | <0.2 | <0.1 | <0.1 | <0.1 | N.A. | N.A. |
| Toluene | mg/kg | 135 | 7 | 0.1 | <0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | <0.1 | <0.1 | <0.5 | <0.1 | <0.1 | <0.1 | N.A. | N.A. |
| Ethylbenzene | mg/kg | 165 | 7 | 0.1 | <0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | <0.1 | <0.1 | <0.5 | <0.1 | <0.1 | <0.1 | N.A. | N.A. |
| Total Xylenes | mg/kg | 180 | 7 | 0.3 | <0.3 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.3 | <0.3 | <0.3 | <0.5 | <0.3 | <0.3 | **0.4** | N.A. | N.A. |
| Total VOC | mg/kg | - | - | 24 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <24 | N.A. | N.A. |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 215 | 7 | 25 | <25 | N.A. | N.A. | N.A. | N.A. | N.A. | <25 | <25 | <25 | <10 | <25 | <25 | <25 | N.A. | N.A. |
| TRH >C10-C16 | mg/kg | 170 | 7 | 25 | <25 | N.A. | N.A. | N.A. | N.A. | N.A. | <25 | <25 | <25 | <50 | <25 | <25 | 490 | N.A. | N.A. |
| TRH >C16-C34 (F3) | mg/kg | 1700 | 7 | 90 | <90 | N.A. | N.A. | N.A. | N.A. | N.A. | <90 | <90 | <90 | <100 | <90 | <90 | **1400** | N.A. | N.A. |
| TRH >C34-C40 (F4) | mg/kg | 3300 | 7 | 120 | <120 | N.A. | N.A. | N.A. | N.A. | N.A. | <120 | <120 | <120 | <100 | <120 | <120 | **180** | N.A. | N.A. |
| Naphthalene | mg/kg | 370 | 6 | 0.1 | <0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | <0.1 | <0.1 | <0.5 | <0.1 | <0.1 | <0.1 | N.A. | N.A. |
| Benzo(a)pyrene | mg/kg | 172 | 9 | 0.1 | <0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | <0.1 | <0.1 | <0.5 | <0.1 | <0.1 | **0.4** | N.A. | N.A. |
| Carcinogenic PAHs, BaP TEQ | TEQ (mg/kg) | 40 | 1 | 0.3 | <0.3 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.3 | <0.3 | <0.3 | <0.5 | <0.3 | <0.3 | **0.6** | N.A. | N.A. |
| Total PAH | mg/kg | 4000 | 1 | 0.8 | <0.8 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.8 | <0.8 | <0.8 | <0.5 | <0.8 | <0.8 | **3.7** | N.A. | N.A. |
| DDT | mg/kg | 640 | 6 | 0.2 | <0.2 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | N.A. | <0.2 | N.A. | <0.2 | N.A. | N.A. |
| DDT+DDE+DDD | mg/kg | 3600 | 1 | 0.6 | <0.6 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.6 | N.A. | N.A. | <0.6 | N.A. | <0.6 | N.A. | N.A. |
| Aldrin and Dieldrin | mg/kg | 45 | 1 | 0.3 | <0.3 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.3 | N.A. | N.A. | <0.3 | N.A. | <0.3 | N.A. | N.A. |
| Chlordane | mg/kg | 530 | 1 | 0.2 | <0.2 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | N.A. | <0.2 | N.A. | <0.2 | N.A. | N.A. |
| Endosulfan | mg/kg | 2000 | 1 | 0.5 | <0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | N.A. | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. |
| Hexachlorobenzene (HCB) | mg/kg | 80 | 1 | 0.1 | <0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | N.A. | N.A. | <0.1 | N.A. | <0.1 | N.A. | N.A. |
| Heptachlor | mg/kg | 50 | 1 | 0.2 | <0.2 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | N.A. | <0.2 | N.A. | <0.2 | N.A. | N.A. |
| Endrin | mg/kg | 100 | 1 | 0.2 | <0.2 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | N.A. | <0.2 | N.A. | <0.2 | N.A. | N.A. |
| Methoxychlor | mg/kg | 2500 | 1 | 0.1 | <0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | N.A. | N.A. | <0.1 | N.A. | <0.1 | N.A. | N.A. |
| Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 2000 | 1 | 0.2 | <0.2 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.2 | N.A. | N.A. | <0.2 | N.A. | <0.2 | N.A. | N.A. |
| Total OP Pesticides | mg/kg | - | - | 1.7 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <1.7 | N.A. | N.A. |
| Total PCBs (Arochlors) | mg/kg | 7 | 1 | 1 | <1 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <1 | N.A. | N.A. | <1 | N.A. | <1 | N.A. | N.A. |
| Phenol | mg/kg | 240000 | 1 | 0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | N.A. | N.A. |
| Cresols | mg/kg | 25000 | 1 | 1.5 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | <1.5 | N.A. | N.A. |
| Arsenic, As | mg/kg | 160 | 6 | 1 | <1 | N.A. | N.A. | N.A. | N.A. | N.A. | **3** | **3** | <1 | <5 | **3** | **2** | 1000 | 300 | **98** |
| Cadmium, Cd | mg/kg | 3 | 8 | 0.3 | <0.3 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.3 | <0.3 | <0.3 | <1 | <0.3 | <0.3 | 5.1 | 2.1 | **0.55** |
| Chromium, Cr | mg/kg | 330 | 5 | 0.5 | **2.9** | N.A. | N.A. | N.A. | N.A. | N.A. | **2.4** | **16** | **1.7** | **19** | **29** | **11** | **72** | **11** | **10** |
| Copper, Cu | mg/kg | 170 | 4 | 0.5 | **2.4** | N.A. | N.A. | N.A. | N.A. | N.A. | **2.1** | **9.5** | <0.5 | **37** | **31** | **25** | 2400 | 490 | 220 |
| Lead, Pb | mg/kg | 1500 | 1 | 1 | **4** | N.A. | N.A. | N.A. | N.A. | N.A. | **6** | **11** | <1 | **76** | **52** | **68** | 4200 | **590** | **270** |
| Nickel, Ni | mg/kg | 60 | 5 | 0.5 | **1.3** | N.A. | N.A. | N.A. | N.A. | N.A. | **2.5** | **3.9** | **0.7** | **10** | **6.1** | **5.4** | **52** | **9.6** | **4.1** |
| Zinc, Zn | mg/kg | 480 | 3 | 1 | **100** | N.A. | N.A. | N.A. | N.A. | N.A. | **2.5** | **3.9** | <2 | 1750 | 1900 | 850 | 27000 | 4200 | 2800 |
| Mercury | mg/kg | 1 | 8 | 0.05 | <0.05 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.05 | <0.05 | <0.05 | <0.1 | <0.05 | <0.05 | <0.05 | N.A. | N.A. |
| pH | pH Units | - | - | | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | **8.8** | N.A. | N.A. |
| Cation Exchange Capacity | meq/100g | - | - | | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | **13** | N.A. | N.A. |

EILs are based on soil pH of 7.0 and CEC of 0.79meq/100g

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| 9 | CRC CARE Technical Report No. 39 'Risk-based management and remediation guidance for benzo(a)pyrene' |

| | |
|---|---|
| **1800** | Exceeds 50% of the adopted human health assessment criterion |
| **1800** | Exceeds the adopted human health assessment criterion |
| **1800** | Exceeds 250% of the adopted human health assessment criterion |
| 1800 | Exceeds 50% of the adopted ecological assessment criterion |
| 1800 | Exceeds the adopted ecological assessment criterion |
| 1800 | Exceeds 250% of the adopted ecological assessment criterion |

ENVIRONMENTS

# Summary Table 1

Laboratory Analysis

PFAS

| | | Description | HA1-1 | HA1-2 | HA1-3 | HA2-1 | HA2-2 | HA2-3 | HA3-1 | HA3-2 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample Date | 3/6/2021 | 3/6/2021 | 11/6/2021 | 3/6/2021 | 3/6/2021 | 11/6/2021 | 3/6/2021 | 11/6/2021 |
| | | Matrix | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil |
| **Analyte Name** | **Units** | **Reporting Limit** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol (N-MeFOSE) | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol (N-EtFOSE) | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| N-Methylperfluorooctanesulfonamidoacetic acid (N_MeFOSAA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid (N-EtFOSAA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |

**Summary Table 1**
Laboratory Analysis
PFAS

| | | Description | HA3-3 | HA4-1 | HA4-2 | HA4-3 | MW10-1 | MW10-2 | MW10-3 | QC1 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample Date | 11/6/2021 | 11/6/2021 | 11/6/2021 | 11/6/2021 | 3/6/2021 | 3/6/2021 | 3/6/2021 | 11/6/2021 |
| | | Matrix | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil |
| **Analyte Name** | **Units** | **Reporting Limit** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol (N-MeFOSE) | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol (N-EtFOSE) | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| N-Methylperfluorooctanesulfonamidoacetic acid (N_MeFOSAA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid (N-EtFOSAA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |

# Summary Table 1
Laboratory Analysis
PFAS

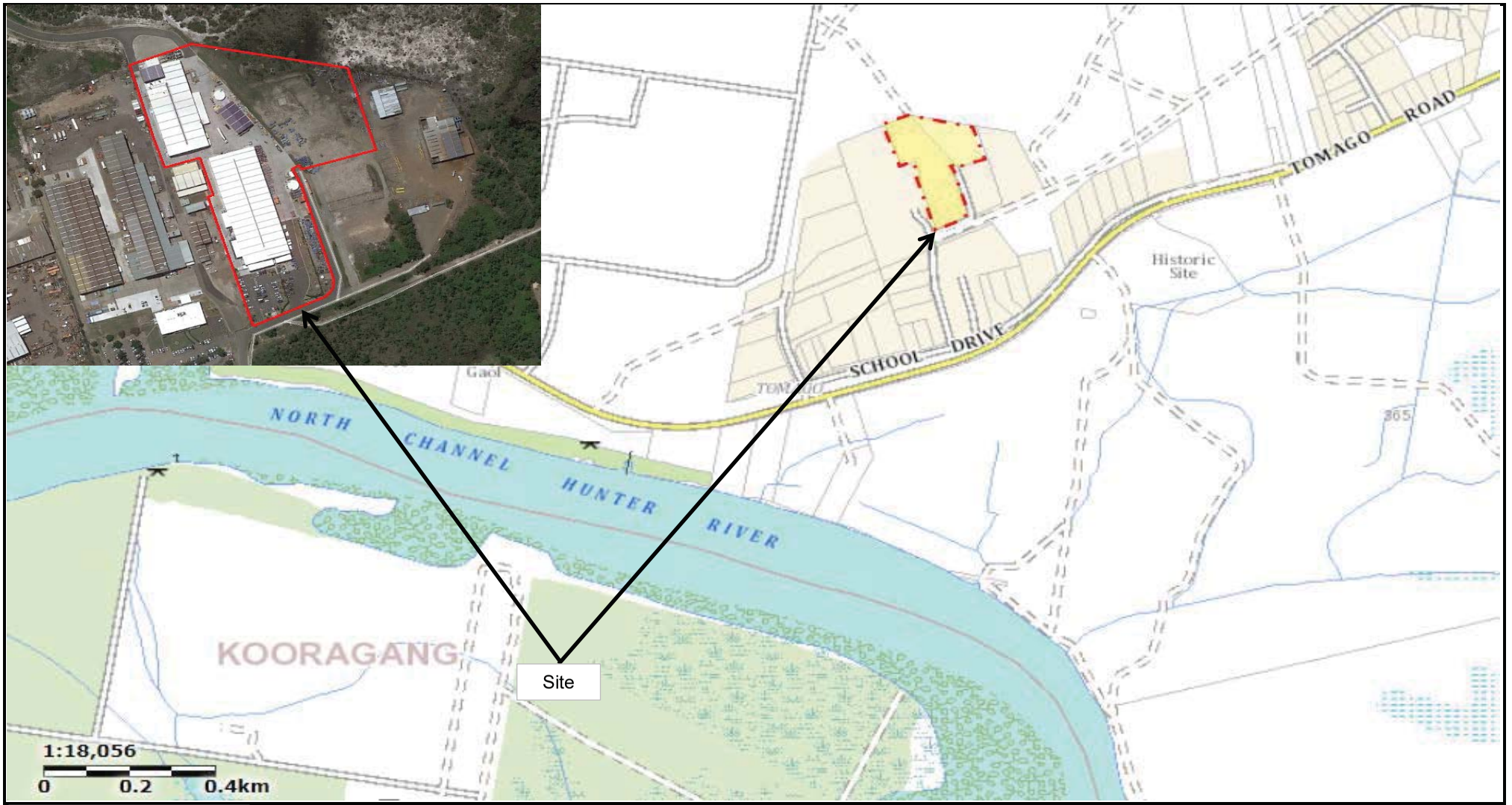
| | | Description | QC1A | | QCA | QCB |
|---|---|---|---|---|---|---|
| | | Sample Date | 11/6/2021 | | 11/6/2021 | 11/6/2021 |
| | | Matrix | Soil | | Rinsate | Rinsate |
| **Analyte Name** | **Units** | **Reporting Limit** | **Result** | **Units** | | |
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | <0.001 | µg/L | <0.002 | <0.002 |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | <0.0002 | µg/L | <0.002 | <0.002 |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | <0.0002 | µg/L | <0.002 | <0.002 |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | <0.0002 | µg/L | <0.002 | <0.002 |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | <0.0002 | µg/L | <0.002 | <0.002 |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | <0.0002 | µg/L | <0.004 | <0.004 |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | <0.0002 | µg/L | <0.004 | <0.004 |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | <0.0002 | µg/L | <0.004 | <0.004 |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | <0.0002 | µg/L | <0.004 | <0.004 |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | <0.0002 | µg/L | <0.004 | <0.004 |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | <0.0005 | µg/L | <0.004 | <0.004 |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | N.A. | µg/L | <0.008 | <0.008 |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | <0.0002 | µg/L | <0.004 | <0.004 |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | <0.0002 | µg/L | <0.004 | <0.004 |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | <0.0002 | µg/L | <0.002 | <0.002 |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | <0.0002 | µg/L | <0.002 | <0.002 |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | **0.0004** | µg/L | <0.002 | **0.003** |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | **0.0004** | µg/L | <0.002 | **0.003** |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | N.A. | µg/L | <0.002 | <0.002 |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | <0.0002 | µg/L | <0.002 | <0.002 |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | N.A. | µg/L | <0.002 | <0.002 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | <0.0005 | µg/L | <0.002 | <0.002 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | <0.0005 | µg/L | <0.002 | <0.002 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | <0.0005 | µg/L | <0.002 | <0.002 |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | <0.0002 | µg/L | <0.008 | <0.008 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | <0.0005 | µg/L | <0.01 | <0.01 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | <0.0005 | µg/L | <0.01 | <0.01 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol (N-MeFOSE) | mg/kg | 0.016 | <0.0005 | µg/L | <0.01 | <0.01 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol (N-EtFOSE) | mg/kg | 0.016 | <0.0005 | µg/L | <0.01 | <0.01 |
| N-Methylperfluorooctanesulfonamidoacetic acid (N_MeFOSAA) | mg/kg | 0.008 | <0.0002 | µg/L | <0.01 | <0.01 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid (N-EtFOSAA) | mg/kg | 0.008 | <0.0002 | µg/L | <0.01 | <0.01 |

**Summary Table 2**

QA/QC

| | | Adopted Trigger Level | Sample ID | QC1 | QC1A | Relative Percentage Difference | TP8 0 | QC2 | Relative Percentage Difference | QC2A | Relative Percentage Difference | HA2-3 | QC1 | Relative Percentage Difference | QC1A | Relative Percentage Difference | FM1 | QC3 | Relative Percentage Difference | QC3A | Relative Percentage Difference | Trip Blank | Trip Spike | QCA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample Date | 6/4/2020 | 6/4/2020 | | 6/4/2020 | 6/4/2020 | | 6/4/2020 | | 11/06/2021 | 11/6/2021 | | 11/6/2021 | | 3/06/2021 | 3/06/2021 | | 3/06/2021 | | 6/4/2020 | 6/4/2020 | 6/4/2020 |
| | | | Matrix | Soil | Soil | | Soil | Soil | | Soil | | Soil | Soil | | Soil | | Soil | Soil | | Soil | | Soil | Soil | Water |
| **Analyte Name** | **Units** | | **Reporting Limit** | **Result** | **Result** | | **Result** | **Result** | | **Result** | | | | | | | | | | | | **Result** | **Result** | **Result (µg/L)** |
| Benzene | mg/kg | 3 | 0.1 | <0.1 | <0.2 | 0% | <0.1 | <0.1 | 0% | <0.2 | 0% | <0.1 | <0.1 | 0% | <0.2 | 0% | <0.1 | <0.1 | 0% | <0.2 | 0% | <0.1 | [101%] | N.A. |
| Toluene | mg/kg | 135 | 0.1 | <0.1 | <0.5 | 0% | <0.1 | <0.1 | 0% | <0.5 | 0% | <0.1 | <0.1 | 0% | <0.5 | 0% | <0.1 | <0.1 | 0% | <0.5 | 0% | <0.1 | [97%] | N.A. |
| Ethylbenzene | mg/kg | 165 | 0.1 | <0.1 | <0.5 | 0% | <0.1 | <0.1 | 0% | <0.5 | 0% | <0.1 | <0.1 | 0% | <0.5 | 0% | <0.1 | <0.1 | 0% | <0.5 | 0% | <0.1 | [95%] | N.A. |
| Total Xylenes | mg/kg | 95 | 0.3 | <0.3 | <0.5 | N.A. | <0.3 | <0.3 | N.A. | <0.5 | N.A. | <0.3 | <0.3 | 0% | <0.5 | 0% | <0.3 | <0.3 | 0% | <0.5 | 0% | <0.3 | N.A. | N.A. |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 215 | 25 | <25 | <10 | N.A. | <25 | <25 | N.A. | <10 | N.A. | <25 | <25 | 0% | <10 | 0% | <25 | <25 | 0% | <10 | 0% | N.A. | N.A. | N.A. |
| TRH >C10-C16 | mg/kg | 170 | 25 | <25 | <50 | N.A. | <25 | <25 | N.A. | <50 | N.A. | <25 | <25 | 0% | <50 | 0% | <25 | <25 | 0% | <50 | 0% | N.A. | N.A. | N.A. |
| TRH >C16-C34 (F3) | mg/kg | 1700 | 90 | <90 | <100 | N.A. | <90 | <50 | N.A. | <100 | N.A. | <90 | <90 | 0% | <100 | 0% | <90 | <90 | 0% | <100 | 0% | N.A. | N.A. | N.A. |
| TRH >C34-C40 (F4) | mg/kg | 3300 | 120 | <120 | <100 | N.A. | <120 | <100 | N.A. | <100 | N.A. | <120 | <120 | 0% | <100 | 0% | <120 | <120 | 0% | <100 | 0% | N.A. | N.A. | N.A. |
| Naphthalene | mg/kg | 370 | 0.1 | <0.1 | <0.5 | 0% | <0.1 | <100 | 0% | <0.5 | 0% | <0.1 | <0.1 | 0% | <0.5 | 0% | <0.1 | <0.1 | 0% | <0.5 | 0% | N.A. | N.A. | N.A. |
| Benzo(a)pyrene | mg/kg | 172 | 0.1 | <0.1 | <0.5 | 0% | <0.1 | <0.1 | 0% | <0.5 | 0% | <0.1 | <0.1 | 0% | <0.5 | 0% | <0.1 | **0.5** | 0% | <0.5 | 0% | N.A. | N.A. | N.A. |
| BaP TEQ | TEQ (mg/kg) | 40 | 0.3 | <0.3 | 1.2 | N.A. | <0.3 | <0.3 | N.A. | **1.2** | N.A. | <0.3 | <0.3 | 0% | <0.5 | 0% | <0.3 | **0.7** | 0% | <0.5 | 0% | N.A. | N.A. | N.A. |
| Total PAH | mg/kg | 4000 | 0.8 | <0.8 | <0.5 | N.A. | <0.8 | <0.8 | N.A. | <0.5 | N.A. | <0.8 | <0.8 | 0% | <0.5 | 0% | <0.8 | **3.5** | 0% | <0.5 | 0% | N.A. | N.A. | N.A. |
| Arsenic, As | mg/kg | 160 | 1 | **2** | <5 | 0% | **1000** | **300** | 108% | **166** | 143% | <1 | <1 | 0% | <5 | 0% | **2** | **9** | **127%** | <5 | **0** | N.A. | N.A. | <1 |
| Cadmium, Cd | mg/kg | 3 | 0.3 | <0.3 | <1 | 0% | **5.1** | **3.4** | 40% | **3.0** | 52% | <0.3 | <0.3 | 0% | <1 | 0% | <0.3 | <0.3 | 0% | <1 | 0 | N.A. | N.A. | <0.1 |
| Chromium, Cr | mg/kg | 330 | 0.5 | **4.8** | **4.0** | 18% | **37** | **51** | 32% | **56** | 41% | **2.9** | **3.1** | 7% | 4 | 32% | **10** | **22** | **75%** | **19** | **62%** | N.A. | N.A. | <1 |
| Copper, Cu | mg/kg | 170 | 0.5 | **14** | **12** | 15% | **2400** | **3200** | 29% | **2720** | 13% | **2.4** | **2.5** | 4% | <5 | 0% | **21** | **45** | **73%** | **37** | **55%** | N.A. | N.A. | <1 |
| Lead, Pb | mg/kg | 1500 | 1 | **8** | **8** | 0% | **4200** | **6000** | 35% | **4560** | 8% | **4** | **3** | 29% | <5 | 0% | **36** | **62** | **53%** | **76** | **71%** | N.A. | N.A. | <1 |
| Nickel, Ni | mg/kg | 60 | 0.5 | **5.1** | **4.0** | 24% | **26** | **12** | 74% | **6** | 125% | **1.3** | **1.3** | 0% | <2 | 0% | **5.5** | **6.6** | **18%** | **10** | **58%** | N.A. | N.A. | <1 |
| Zinc, Zn | mg/kg | 480 | 2 | **170** | **252** | 39% | **27000** | **44000** | 48% | **42600** | 45% | **100** | **95** | 5% | 107 | 7% | **5.5** | **1600** | **199%** | **1750** | **199%** | N.A. | N.A. | **43** |
| Mercury | mg/kg | 1 | 0.05 | <0.05 | <0.1 | 0% | <0.05 | <0.05 | 0% | <0.1 | 0% | <0.05 | <0.05 | 0% | <0.1 | 0% | <0.05 | <0.05 | 0% | <0.01 | 0 | N.A. | N.A. | <0.1 |

# Figures




ENVIRONMENTS

CLIENT: **Remondis**

PROJECT TITLE: **School Drive, Tomago**

| | | | | |
|---|---|---|---|---|
| PROJECT: | JME20005 | DESIGNED: | JMc | |
| DWG #: | 1 | DRAWN: | JH | |
| REVISION: | 1 | STATUS: | NFC | |
| SCALE: | As shown | | | |
| DATE: | 2/06/2020 | | | |

FIGURE TITLE: **Site Location Plan**

FIGURE NUMBER: **1**




| | | | | | | |
|---|---|---|---|---|---|---|
| CLIENT: **Remondis** | | PROJECT: | JME20005 | DESIGNED: | JMc | FIGURE TITLE |
| | | DWG #: | 1 | DRAWN: | JH | **Site Features** |
| | | REVISION: | 1 | | | |
| PROJECT TITLE: **School Drive, Tomago** | | SCALE: | As shown | STATUS: | | |
| | | DATE: | 2/6 | | | FIGURE: **2** |

ENVIRONMENTS




| | | | | | | |
|---|---|---|---|---|---|---|
| ENVIRONMENTS | CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | FIGURE TITLE: |
| | | DWG #: | 1 | DRAWN: | JH | **MBE2017 Boreholes** |
| | | REVISION: | 1 | | | |
| | PROJECT TITLE: **School Drive, Tomago** | SCALE: | NTS | STATUS: | NFC | |
| | | DATE: | 2/06/2020 | | | FIGURE NUMBER: **3** |

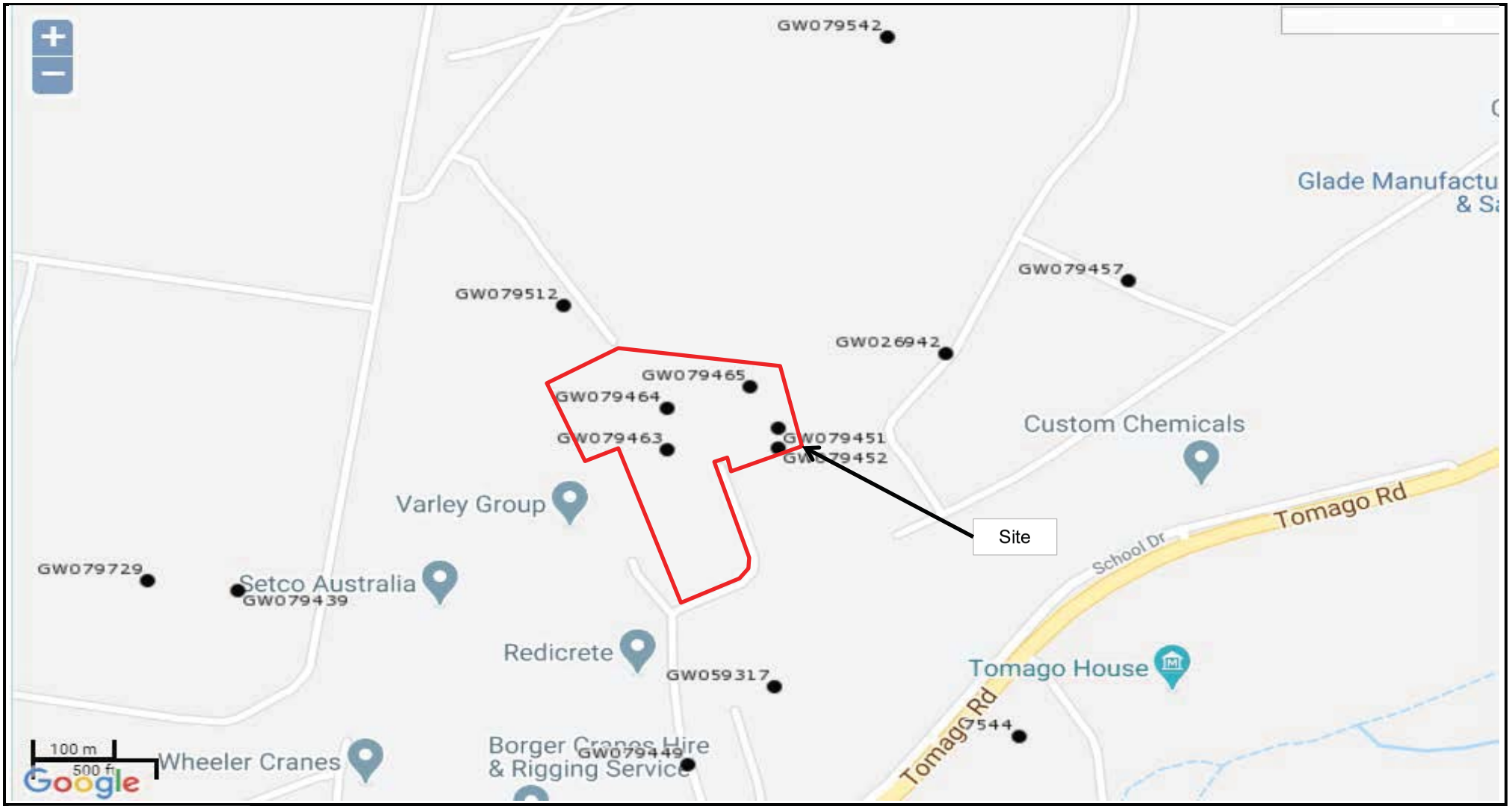



ENVIRONMENTS

CLIENT: **Remondis**

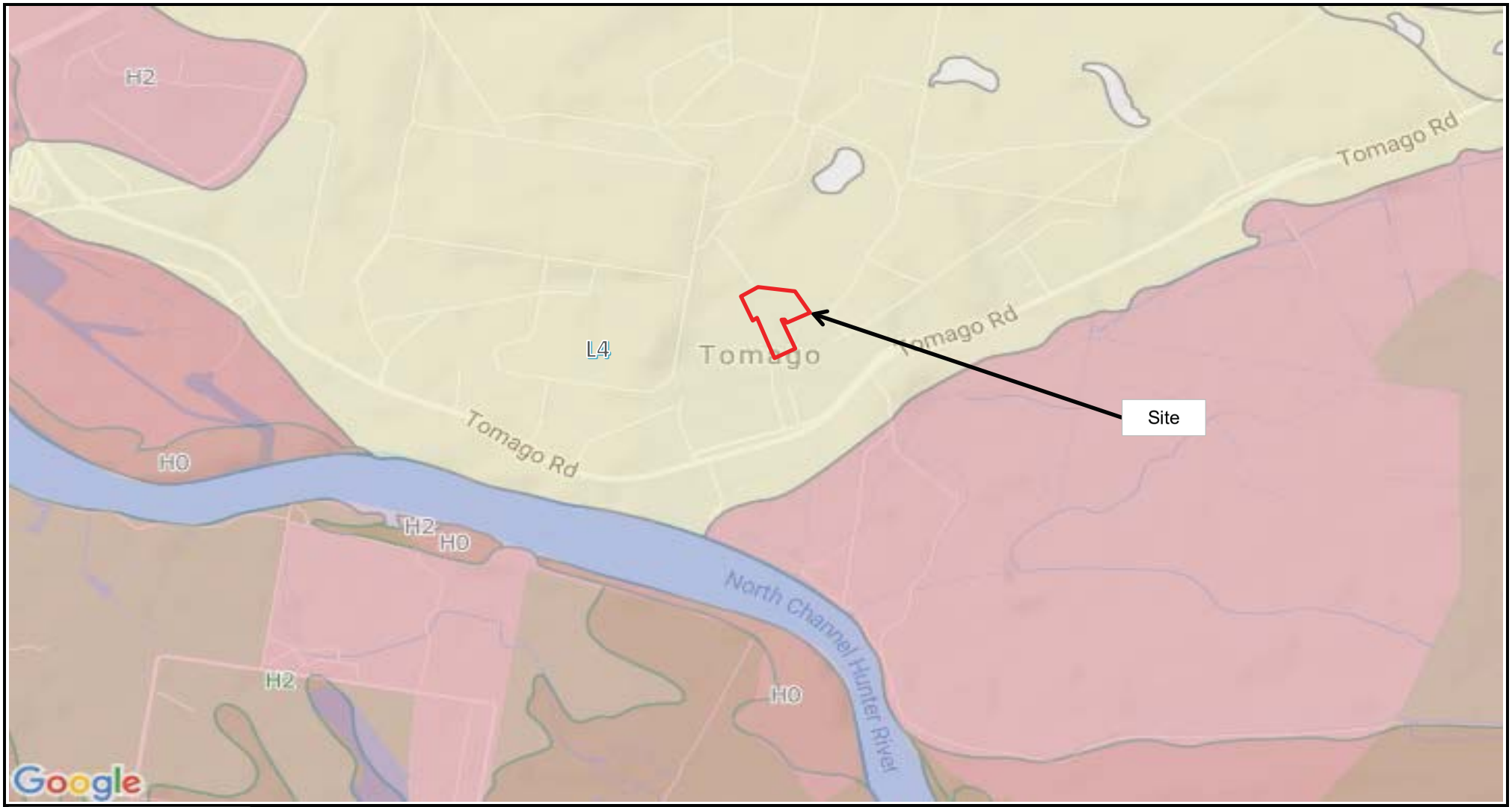
PROJECT TITLE: **School Drive, Tomago**

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | JME20005 | DESIGNED: | JMc | | FIGURE TITLE: |
| DWG #: | 1 | DRAWN: | JH | | **MBE2017 Test Pits** |
| REVISION: | 1 | | | | |
| SCALE: | As shown | STATUS: | NFC | | |
| DATE: | 2/06/2020 | | | | FIGURE NUMBER: **4** |




ENVIRONMENTS

| | | | | | | |
|---|---|---|---|---|---|---|
| CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | | FIGURE TITLE: |
| | DWG #: | 1 | DRAWN: | JH | | **Groundwater Bores** |
| | REVISION: | 1 | | | | |
| PROJECT TITLE: **School Drive, Tomago** | SCALE: | As shown | STATUS: | NFC | | |
| | DATE: | 2/06/2020 | | | | FIGURE NUMBER: **5** |




| | | | | | | |
|---|---|---|---|---|---|---|
| JM ENVIRONMENTS | CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | FIGURE TITLE: |
| | | DWG #: | 1 | DRAWN: | JH | **Acid Sulfate Soils** |
| | | REVISION: | 1 | STATUS: | NFC | |
| | PROJECT TITLE: **School Drive, Tomago** | SCALE: | NTS | | | |
| | | DATE: | 2/06/2020 | | | FIGURE NUMBER: **6** |




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ENVIRONMENTS | | CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | FIGURE TITLE: |
| | | | DWG #: | 1 | DRAWN: | JH | **EPA Records** |
| | | | REVISION: | 1 | | | |
| | | PROJECT TITLE: **School Drive, Tomago** | SCALE: | As shown | STATUS: | NFC | |
| | | | DATE: | 2/06/2020 | | | FIGURE NUMBER: **7** |




| | | | | | | |
|---|---|---|---|---|---|---|
| ENVIRONMENTS | CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | FIGURE TITLE: |
| | | DWG #: | 1 | DRAWN: | JH | **Sampling Locations** |
| | | REVISION: | 1 | | | |
| | PROJECT TITLE: **School Drive, Tomago** | SCALE: | As shown | STATUS: | NFC | |
| | | DATE: | 2/06/2020 | | | FIGURE NUMBER: **8** |




ENVIRONMENTS

CLIENT: **Remondis**

PROJECT TITLE: **School Drive, Tomago**

| | | | | |
|---|---|---|---|---|
| PROJECT: | JME20005 | DESIGNED: | JMc | |
| DWG #: | 1 | DRAWN: | JH | |
| REVISION: | 1 | | | |
| SCALE: | As shown | STATUS: | NFC | |
| DATE: | 21/04/2020 | | | |

FIGURE TITLE: **Copper Exceedances**

FIGURE NUMBER: **9**




JM ENVIRONMENTS

N

CLIENT: **Remondis**

PROJECT TITLE: **School Drive, Tomago**

| | | | | |
|---|---|---|---|---|
| PROJECT: | JME20005 | DESIGNED: | JMc | |
| DWG #: | 1 | DRAWN: | JH | |
| REVISION: | 1 | | | |
| SCALE: | As shown | STATUS: | NFC | |
| DATE: | 30/06/2021 | | | |

FIGURE TITLE: **As, Cd, Pb Exceedances**

FIGURE NUMBER: **10**




ENVIRONMENTS

CLIENT: **Remondis**

PROJECT TITLE: **School Drive, Tomago**

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | JME20005 | DESIGNED: | JMc | | FIGURE TITLE: |
| DWG #: | 1 | DRAWN: | JH | | **Aerial photograph 1954** |
| REVISION: | 1 | | | | |
| SCALE: | NTS | STATUS: | NFC | | |
| DATE: | 2/06/2020 | | | | FIGURE NUMBER: **11** |

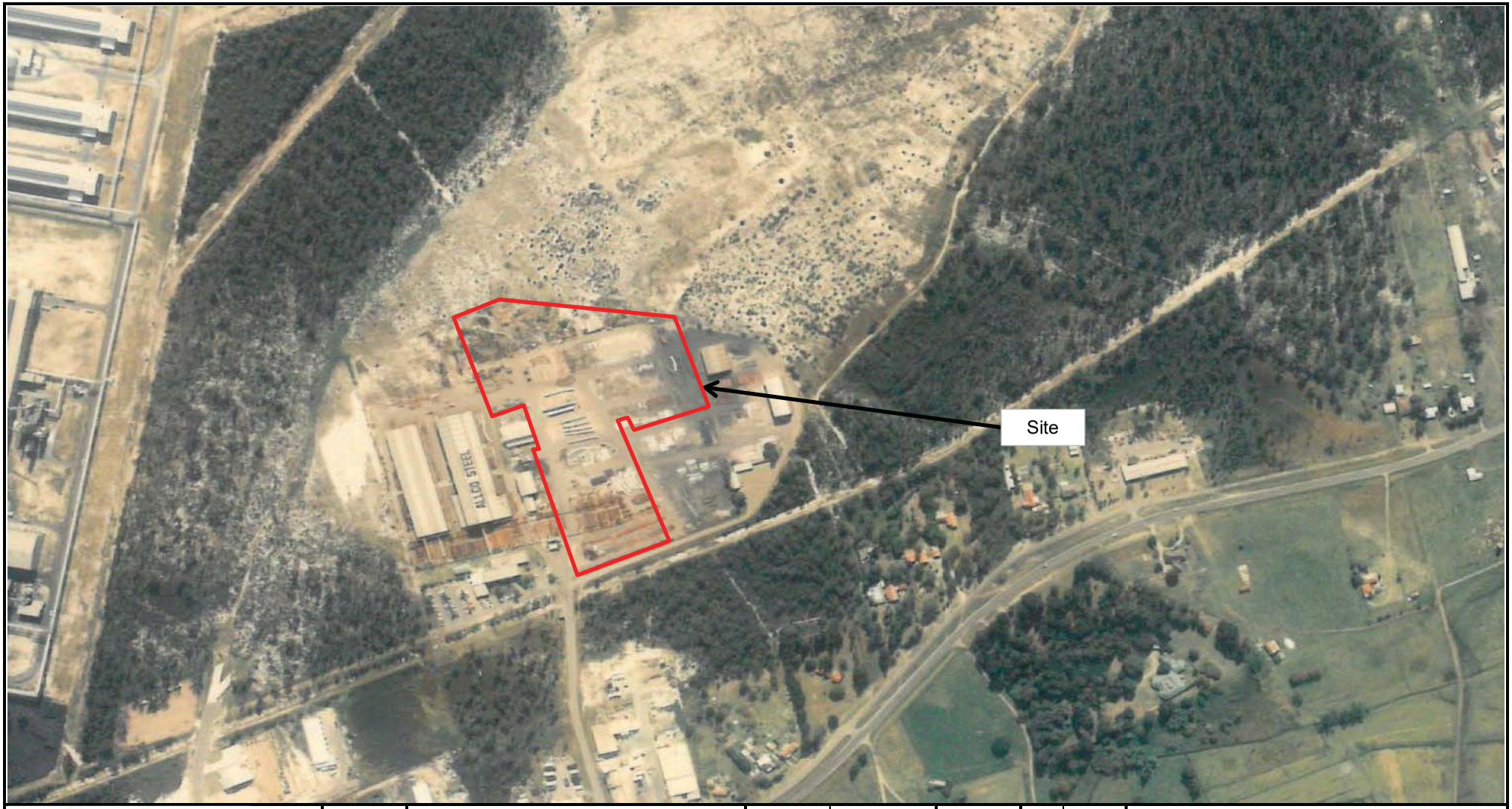



ENVIRONMENTS

CLIENT: **Remondis**

PROJECT TITLE: **School Drive, Tomago**

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | JME20005 | DESIGNED: | JMc | | FIGURE TITLE: |
| DWG #: | 1 | DRAWN: | JH | | **Aerial photograph 1974** |
| REVISION: | 1 | | | | |
| SCALE: | NTS | STATUS: | NFC | | |
| DATE: | 2/06/2020 | | | | FIGURE NUMBER: **12** |




| | | | | | | |
|---|---|---|---|---|---|---|
| ENVIRONMENTS | CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | FIGURE TITLE: |
| | | DWG #: | 1 | DRAWN: | JH | **Aerial photograph 1987** |
| | | REVISION: | 1 | | | |
| | PROJECT TITLE: **School Drive, Tomago** | SCALE: | NTS | STATUS: | NFC | |
| | | DATE: | 2/06/2020 | | | FIGURE NUMBER: **13** |




| | | | | | | |
|---|---|---|---|---|---|---|
| JME ENVIRONMENTS | CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | FIGURE TITLE: |
| | | DWG #: | 1 | DRAWN: | JH | **Aerial photograph 1993** |
| | | REVISION: | 1 | | | |
| | PROJECT TITLE: **School Drive, Tomago** | SCALE: | NTS | STATUS: | NFC | |
| | | DATE: | 2/06/2020 | | | FIGURE NUMBER: **14** |




| | | | | | | |
|---|---|---|---|---|---|---|
| ENVIRONMENTS | CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | FIGURE TITLE: |
| | | DWG #: | 1 | DRAWN: | JH | **Aerial photograph 2007** |
| | | REVISION: | 1 | | | |
| | PROJECT TITLE: **School Drive, Tomago** | SCALE: | As shown | STATUS: | NFC | |
| | | DATE: | 2/06/2020 | | | FIGURE NUMBER: **15** |




| | | | | | | |
|---|---|---|---|---|---|---|
| ENVIRONMENTS | CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | FIGURE TITLE: |
| | | DWG #: | 1 | DRAWN: | JH | **Aerial photograph 2016** |
| | | REVISION: | 1 | | | |
| | PROJECT TITLE: **School Drive, Tomago** | SCALE: | As shown | STATUS: | NFC | |
| | | DATE: | 2/06/2020 | | | FIGURE NUMBER: **16** |

# Appendix A

## Site Photographs



**Photograph 1:** Metal-clad building with guttering and down pipes



**Photograph 2:** Gratings in paved area of Lot 11



**Photograph 3:** Concrete pad in Lot 8



**Photograph 4:** Dark sand on surface of Lot 8



**Photograph 5:** Concrete beams and concrete-filled tyres in Lot 8



**Photograph 6:** Concrete-filled tyres near northern boundary of Lot 8, white sand through boundary fence to north



**Photograph 7:** Soil stockpile in Lot 8



**Photograph 8:** Light brown sand on auger, dark brown sandy fill on ground, borehole BH1



**Photograph 9:** BH2 SPT sample 1.0 – 1.45mbgl



**Photograph 10:** BH2 SPT sample 2.0 – 2.45mbgl

No photograph
**Photograph 11:** Test pit TP1



**Photograph 12:** Test pit TP2



**Photograph 13:** Test pit TP3



**Photograph 14:** Test pit TP4



**Photograph 15:** Test pit TP5



**Photograph 16:** Test pit TP6



**Photograph 17:** Test pit TP7



**Photograph 18:** Test pit TP8



**Photograph 19:** Test pit TP9



**Photograph 20:** Test pit TP10



**Photograph 21:** Test pit TP11



**Photograph 22:** Test pit TP12



**Photograph 23:** Test pit TP13



**Photograph 34:** Test pit TP14



**Photograph 35:** Test pit TP15

# Appendix B

## Logs

# TEST PIT LOG: BH1



**PROJECT No: JME20005**
**DATE: 06/04/2020**
**EASTING: 380923**
**SITE: 21 School Drive, Tomago**
**LOGGED BY: J Howard**
**NORTHING: 6367297**
**CLIENT: Remondis**
**TOTAL DEPTH: 2.5**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | Ground Surface | | | |
| 0 | | CONCRETE | | | |
| | | SAND, brown, fine to medium grained, common gravel | | BH1 0.2 - 0.3 QC1, QC1A | Fill, brick and concrete rubble below 0.5m |
| 1 | | | | BH1 1 - 1.1 | |
| | | SAND, light brown fine grained | | BH1 1.4 - 1.5 | Groundwater 2.4m, EOH 2.5m |
| 2 | | | | BH1 1.9 - 2 | |
| | | | | BH1 2.4 - 2.5 | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: 2.4m**

**Static Groundwater Level:**

**Reviewed By:** | **FILE**

# TEST PIT LOG: BH2



**PROJECT No: JME20005** | **DATE: 06/04/2020** | **EASTING: 380961**

**SITE: 21 School Drive, Tomago** | **LOGGED BY: J Howard** | **NORTHING: 6367279**

**CLIENT: Remondis** | **TOTAL DEPTH: 2.45**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | ~~Ground Surface~~ | | | |
| 0 | | CONCRETE | | | |
| | | SAND, brown, fine to medium grained | | BH2 0.2 - 0.3 | Fill |
| | | SAND, light brown, fine to medium grained, common gravel | | | Fill |
| 1 | | SAND, light brown, fine to medium grained, some gravel | | BH2 1 - 1.45 | Fill, some brick rubble, SPT @ 1m 10,19,25 |
| 2 | | SAND, light brown, fine to medium grained | | BH2 2 - 2.45 | SPT @ 2m 9,13,13, groundwater 2.4m, EOH 2.45m |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: 2.4m**

**Static Groundwater Level:**

| | Reviewed By: | FILE |
|---|---|---|

# TEST PIT LOG: TP1



**PROJECT No: JME20005**
**DATE: 06/04/2020**
**EASTING: 380983**
**SITE: 21 School Drive, Tomago**
**LOGGED BY: J McCreery**
**NORTHING: 6367349**
**CLIENT: Remondis**
**TOTAL DEPTH: 1.6**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| 0 | | ~~Ground Surface~~ | | | |
| | | SAND, dark brown, fine grained | | TP1 0 | |
| 1 | | | | | Fill, common organic matter, trace amounts of large rocks, plastic, terra cotta, concrete and brick, EOH 1.6m |
| | | | | TP1 1.6 | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: Not encountered**

**Static Groundwater Level:**

**Reviewed By:** | **FILE**

# TEST PIT LOG: TP2



**PROJECT No: JME20005**
**SITE: 21 School Drive, Tomago**
**CLIENT: Remondis**

**DATE: 06/04/2020**
**LOGGED BY: J McCreery**
**TOTAL DEPTH: 1**

**EASTING: 381044**
**NORTHING: 6367334**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | Ground Surface | | | |
| 0 | | Gravelly SAND, dark yellow to light brown, fine to medium grained | | TP2 0 | Fill, common organic matter |
| | | SAND, grey, fine grained | | TP2 0.75 | EOH 1m |
| 1 | | | | | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: Not encountered**

**Static Groundwater Level:**

| | Reviewed By: | FILE |
|---|---|---|

# TEST PIT LOG: TP3



**PROJECT No: JME20005**
**DATE: 06/04/2020**
**EASTING: 381111**
**SITE: 21 School Drive, Tomago**
**LOGGED BY: J McCreery**
**NORTHING: 6367323**
**CLIENT: Remondis**
**TOTAL DEPTH: 1**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | ~~Ground Surface~~ | | | |
| 0 | | SAND, black, fine grained | | TP3 0 | Fill |
| | | SAND, brown, fine grained | | | EOH 1m |
| | | | | TP3 0.9 | |
| 1 | | | | | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: Not encountered**

**Static Groundwater Level:**

**Reviewed By:** | **FILE**

# TEST PIT LOG: TP4



**PROJECT No: JME20005**
**SITE: 21 School Drive, Tomago**
**CLIENT: Remondis**

**DATE: 06/04/2020**
**LOGGED BY: J McCreery**
**TOTAL DEPTH: 0.7**

**EASTING: 381031**
**NORTHING: 6367318**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | ~~Ground Surface~~ | | | |
| 0 | | SAND, dark brown, medium grained | | TP4 0 | Fill, common organic matter |
| | | SAND, dark brown, medium grained | | | Fill, some cobbles |
| | | SAND, grey | | TP4 0.6 | EOH 0.7m |
| 1 | | | | | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: Not encountered**

**Static Groundwater Level:**

| | Reviewed By: | FILE |
|---|---|---|

# TEST PIT LOG: TP5



**PROJECT No: JME20005**
**SITE: 21 School Drive, Tomago**
**CLIENT: Remondis**

**DATE: 06/04/2020**
**LOGGED BY: J McCreery**
**TOTAL DEPTH: 0.8**

**EASTING: 381086**
**NORTHING: 6367310**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | Ground Surface | | | |
| 0 | | SAND, mottled light and dark brown, fine grained | | TP5 0 | Fill, common organic matter, trace amounts of large rocks and sandstone cobbles |
| | | SAND, brown, medium grained | | | Fill |
| | | SAND, grey, medium grained | | TP5 0.5 | EOH 0.8m |
| 1 | | | | | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: Not encountered**

**Static Groundwater Level:**

| | Reviewed By: | FILE |
|---|---|---|

## TEST PIT LOG: TP6



**PROJECT No: JME20005**
**SITE: 21 School Drive, Tomago**
**CLIENT: Remondis**

**DATE: 06/04/2020**
**LOGGED BY: J McCreery**
**TOTAL DEPTH: 1.1**

**EASTING: 381020**
**NORTHING: 6367303**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | ~~Ground Surface~~ | | | |
| 0 | | Gravelly SAND, dark brown, medium grained | | TP6 0 | Fill |
| | | SAND, light brown, fine grained | | | EOH 1.1m |
| 1 | | | | TP6 1 | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: Not encountered**

**Static Groundwater Level:**

| | Reviewed By: | FILE |
|---|---|---|

# TEST PIT LOG: TP7



**PROJECT No:** JME20005
**DATE:** 06/04/2020
**EASTING:** 381065
**SITE:** 21 School Drive, Tomago
**LOGGED BY:** J Howard
**NORTHING:** 6367300
**CLIENT:** Remondis
**TOTAL DEPTH:** 0.7

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| 0 | | Ground Surface | | | |
| | | Gravelly SAND, dark brown to black | | TP7 0 | Fill |
| | | Sandy gravelly CLAY, red brown | | | Fill |
| | | SAND, brown, fine to medium grained | | | EOH 0.7m |
| | | | | TP7 0.6 | |
| 1 | | | | | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater:** Not encountered

**Static Groundwater Level:**

| | Reviewed By: | FILE |
|---|---|---|

# TEST PIT LOG: TP8



**PROJECT No: JME20005**
**DATE: 06/04/2020**
**EASTING: 381119**
**SITE: 21 School Drive, Tomago**
**LOGGED BY: J Howard**
**NORTHING: 6367294**
**CLIENT: Remondis**
**TOTAL DEPTH: 0.7**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | ~~Ground Surface~~ | | | |
| 0 | | SAND, black, fine grained | | TP8 0<br>QC2, QC2A | Fill, some plastic |
| | | SAND, brown, fine to medium grained | | | EOH 0.7m |
| | | | | TP8 0.7 | |
| 1 | | | | | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: Not encountered**

**Static Groundwater Level:**

| | Reviewed By: | FILE |
|---|---|---|

# TEST PIT LOG: TP9



**PROJECT No: JME20005**
**DATE: 06/04/2020**
**EASTING: 381051**
**SITE: 21 School Drive, Tomago**
**LOGGED BY: J Howard**
**NORTHING: 6367285**
**CLIENT: Remondis**
**TOTAL DEPTH: 0.5**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | ~~Ground Surface~~ | | | |
| 0 | | Silty SAND, black, fine grained | | TP9 0 | Fill, common roots |
| | | Clayey GRAVEL, brown | | TP9 0.3 | Fill |
| | | Gravelly CLAY, orange brown | | TP9 0.5 | EOH 0.5m at excavator refusal |
| 1 | | | | | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: Not encountered**

**Static Groundwater Level:**

| | Reviewed By: | FILE |
|---|---|---|

# TEST PIT LOG: TP10



**PROJECT No: JME20005**
**SITE: 21 School Drive, Tomago**
**CLIENT: Remondis**

**DATE: 06/04/2020**
**LOGGED BY: J Howard**
**TOTAL DEPTH: 0.6**

**EASTING: 381100**
**NORTHING: 6367280**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| 0 | | Ground Surface | | | |
| | | Gravelly CLAY, orange brown | | TP10 0 | Fill |
| | | SAND, grey | | TP10 0.3 | Fill |
| | | SAND, brown to red brown, fine to medium grained | | TP10 0.6 | EOH 0.6m |
| 1 | | | | | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: Not encountered**

**Static Groundwater Level:**

**Reviewed By:**

**FILE**

# TEST PIT LOG: TP11



**PROJECT No: JME20005**
**DATE: 06/04/2020**
**EASTING: 381054**
**SITE: 21 School Drive, Tomago**
**LOGGED BY: J Howard**
**NORTHING: 6367262**
**CLIENT: Remondis**
**TOTAL DEPTH: 0.8**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| 0 | | ~~Ground Surface~~ | | | |
| | | Gravelly SAND, brown to orange brown | | TP11 0 | Fill |
| | | SAND, grey to grey brown, fine grained | | TP11 0.2 | Fill |
| | | SAND, orange brown, fine to medium grained | | TP11 0.5 | EOH 0.8m |
| 1 | | | | | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: Not encountered**

**Static Groundwater Level:**

| | Reviewed By: | FILE |
|---|---|---|

# TEST PIT LOG: TP12



**PROJECT No: JME20005**
**SITE: 21 School Drive, Tomago**
**CLIENT: Remondis**

**DATE: 06/04/2020**
**LOGGED BY: J Howard**
**TOTAL DEPTH: 0.7**

**EASTING: 381090**
**NORTHING: 6367259**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | Ground Surface | | | |
| 0 | | Gravelly SAND, brown | | TP12 0 | Fill, some brick |
| | | Clayey sandy GRAVEL, yellow brown | | TP12 0.5 | Fill |
| | | SAND, orange brown, fine to medium grained | | TP12 0.7 | EOH 0.7m |
| 1 | | | | | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: Not encountered**

**Static Groundwater Level:**

**Reviewed By:**

**FILE**

# TEST PIT LOG: TP13



**PROJECT No: JME20005**
**DATE: 06/04/2020**
**EASTING: 381132**
**SITE: 21 School Drive, Tomago**
**LOGGED BY: J Howard**
**NORTHING: 6367257**
**CLIENT: Remondis**
**TOTAL DEPTH: 0.7**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| 0 | | ~~Ground Surface~~ | | | |
| | | Gravelly clayey SILT, brown | | TP13 0 | Fill |
| | | SAND, dark grey brown, fine grained | | TP13 0.3 | Fill |
| | | SAND, brown, fine to medium grained | | TP13 0.5 | EOH 0.7m |
| 1 | | | | | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: Not encountered**

**Static Groundwater Level:**

| | Reviewed By: | FILE |
|---|---|---|

# TEST PIT LOG: TP14



**PROJECT No: JME20005**
**DATE: 06/04/2020**
**EASTING: 381081**
**SITE: 21 School Drive, Tomago**
**LOGGED BY: J Howard**
**NORTHING: 6367246**
**CLIENT: Remondis**
**TOTAL DEPTH: 0.6**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| 0 | | Ground Surface | | | |
| | | Road base GRAVEL, grey | | TP14 0 | Fill |
| | | SAND, dark grey brown, fine grained | | TP14 0.3 | Fill |
| | | SAND, brown, fine to medium grained | | TP14 0.5 | EOH 0.6m |
| 1 | | | | | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: Not encountered**

**Static Groundwater Level:**

**Reviewed By:** | **FILE**

# TEST PIT LOG: TP15



**PROJECT No: JME20005**
**DATE: 06/04/2020**
**EASTING: 381119**
**SITE: 21 School Drive, Tomago**
**LOGGED BY: J Howard**
**NORTHING: 6367242**
**CLIENT: Remondis**
**TOTAL DEPTH: 0.7**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | Ground Surface | | | |
| 0 | | SAND, brown, fine to medium grained, some gravel | | TP15 0 | Fill |
| | | Sandy clayey GRAVEL, yellow brown | | | Fill, irregular band |
| | | SAND, dark grey to black, very fine to fine grained | | TP15 0.5 | Fill |
| | | SAND, orange brown, fine to medium grained | | | EOH 0.7m |
| 1 | | | | | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: Not encountered**

**Static Groundwater Level:**

**Reviewed By:** | **FILE**

# TEST PIT LOG: HA1



**PROJECT No: JME20005**
**DATE: 06/06/2021 and 13/6/2021**
**EASTING: 381060**
**SITE: 21 School Drive, Tomago**
**LOGGED BY: J McMahon**
**NORTHING: 6367088**
**CLIENT: Remondis**
**TOTAL DEPTH: 2**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | ~~Ground Surface~~ | | | |
| 0 | | Sands and Gravel | | | Hand auger |
| | | SAND, brown, fine to medium grained, with some common gravel | | HA1-1 | |
| 1 | | | | HA1-2 | |
| | | SAND, light brown fine grained | | | Damp |
| | | | | HA1-3 | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: not rencountered**

**Static Groundwater Level:**

**Reviewed By:** | **FILE**

# TEST PIT LOG: HA2



**PROJECT No: JME20005**
**DATE: 06/06/2021 and 13/6/2021**
**EASTING: 381068**
**SITE: 21 School Drive, Tomago**
**LOGGED BY: J McMahon**
**NORTHING: 6367171**
**CLIENT: Remondis**
**TOTAL DEPTH: 2**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | ~~Ground Surface~~ | | | |
| 0 | | Sands and Gravel | Nil | | Hand auger |
| | | SAND, brown, fine to medium grained, with some common gravel | | HA2-1 | |
| 1 | | | | HA2-2 | |
| | | SAND, light brown fine grained | | | Damp |
| | | | | HA2-3 | |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: not rencountered**

**Static Groundwater Level:**

**Reviewed By:** | **FILE**

# TEST PIT LOG: HA3



**PROJECT No: JME20005**
**DATE: 06/06/2021 and 13/6/2021**
**EASTING: 381108**
**SITE: 21 School Drive, Tomago**
**LOGGED BY: J McMahon**
**NORTHING: 6367265**
**CLIENT: Remondis**
**TOTAL DEPTH: 2**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | ~~Ground Surface~~ | | | |
| 0 | | Sands gravels and sandstone cobbles | Nil | | Pincer shovel |
| | | SAND, brown, fine to medium grained, with some common gravel | | HA3-1 | Hand auger |
| 1 | | | | HA3-2 | |
| | | SAND, light brown fine grained | | | |
| | | | | HA3-3 | Damp |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: not rencountered**

**Static Groundwater Level:**

| | Reviewed By: | FILE |
|---|---|---|

# TEST PIT LOG: HA4



**PROJECT No: JME20005**
**DATE: 06/06/2021 and 13/6/2021**
**EASTING: 381036**
**SITE: 21 School Drive, Tomago**
**LOGGED BY: J McMahon**
**NORTHING: 6367314**
**CLIENT: Remondis**
**TOTAL DEPTH: 2**

| DEPTH (m) | LEGEND | DESCRIPTION | ODOUR | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|
| | | ~~Ground Surface~~ | | | |
| 0 | | Sands and Gravels with some brick and concrete rubble. | Nil | | Hand auger |
| | | SAND, brown, fine to medium grained, with some common gravel | | HA4-1 | |
| 1 | | | | HA4-2 | |
| | | SAND, light brown fine grained | | | |
| | | | | HA4-3 | Damp |
| 2 | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: not rencountered**

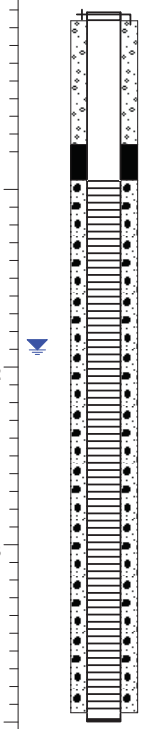
**Static Groundwater Level:**

**Reviewed By:** | **FILE**

# MONITORING WELL LOG: MW10



| | | |
|---|---|---|
| PROJECT No: JME20005 | DATE: 3 June 2021 | EASTING: 381010 |
| SITE: 21D School Drive Tomago | LOGGED BY: J.McMahon | NORTHING: 6367258 |
| CLIENT: Remondis | TOTAL DEPTH: 4 | CASING HEIGHT: 0m |
| CONTRACTOR: FICO Group | DRILLER: Sean Curry | DRILLING METHOD: Solid Flight Auger |

| DEPTH (m) | WELL CONSTRUCTION | LEGEND | DESCRIPTION | ODOUR | PID (ppmv) | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|---|---|
| |  | | Ground Surface<br>Concrete<br>Fill: grey brown SAND | | | MW10-1<br>MW10-2 | |
| 1 | | | | | | | MW10 was drilled three times. First two times the auger was refused on large ballast |
| 2 | | | Light brown SAND. Potential sand mining tailings? | | | MW10-3 | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |

NOTES

Descriptions are based on observations and hand testing of grab samples. Mechanical Tests were not performed unless otherwise stated.

First Occurrence of Groundwater: 2 mbgs

Static Groundwater Level: 2.904 mbtoc 13/04/2021

| | | |
|---|---|---|
| | Reviewed By: JMc | FILE |

# Appendix C

## Section 10.7 Certificates

PORT STEPHENS COUNCIL

ABN 16 744 377 876

116 Adelaide Street, Raymond Terrace NSW 2324
PO Box 42, Raymond Terrace NSW 2324
Ph: (02) 4988 0255 Fax: (02) 4987 3612
Email: plancert@portstephens.nsw.gov.au
http://www.portstephens.nsw.gov.au

# PLANNING CERTIFICATE PURSUANT TO SECTION 10.7 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

**APPLICANT DETAILS:**

**JM Environments**
**37 Tooke Street**
**Cooks Hill**
**NSW 2300**

**Reference:**

**Issue Date:** **05/02/2020**

**PROPERTY DESCRIPTION:**

**21G School Drive TOMAGO NSW 2322** **Parcel No: 38075**
**LOT: 7 DP: 270328**

**Disclaimer**
Information contained in this certificate relates only to the land for which this certificate is issued on the day it is issued. This information is provided in good faith and Council shall not incur any liability in respect of any such advice. Council relies on state agencies for advice and accordingly can only provide that information in accordance with the advice. Verification of the currency of agency advice should occur. For further information, please contact Council by telephoning (02) 4988 0255 or email plancert@portstephens.nsw.gov.au.

**Title Information**
Title information shown on this Planning Certificate is provided from Council's records and may not conform to information shown on the current Certificate of Title. Easements, restrictions as to user, rights of way and other similar information shown on the title of the land are not provided on this planning certificate.

**Inspection of the land**
The Council has made no inspection of the land for the purposes of this Planning Certificate.

## PART A: INFORMATION PROVIDED UNDER SECTION 10.7(2)

Matters contained in this certificate apply only to the land on the date of issue.

**1. Names of relevant planning instruments and DCPs**

(1) The name of each environmental planning instrument that applies to the development on the land.

**State Environmental Planning Policies**

State Environmental Planning Policy No 21 – Caravan Parks

State Environmental Planning Policy No 33 – Hazardous and Offensive Development

State Environmental Planning Policy No 36 – Manufactured Home Estates

State Environmental Planning Policy No 44 – Koala Habitat Protection

State Environmental Planning Policy No 50 – Canal Estate Development

State Environmental Planning Policy No 55 – Remediation of Land

State Environmental Planning Policy No 64 – Advertising and Signage

State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development

State Environmental Planning Policy (Affordable Rental Housing) 2006

State Environmental Planning Policy (Building Sustainability Index BASIX) 2004

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008

State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004

State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (State and Regional Development) 2011

State Environmental Planning Policy (State Significant Precincts) 2005

State Environmental Planning Policy (Primary Production and Rural Development) 2019

State Environmental Planning Policy (Koala Habitat Protection) 2019

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017

**Local Environmental Plan**

Port Stephens Local Environmental Plan 2013

(2) The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act (unless Secretary has notified the Council that the making of the proposed instrument has been deferred indefinitely or has not been approved).

**Draft State Environmental Planning Policies**
No draft State Environmental Planning Policies affect the site the subject of this Certificate.

**Draft Local Environmental Plan**
No draft Local Environmental Plans currently exist which affect the site the subject of this certificate.

**Development Control Plans**
(3) The name of each development control plan that applies to the carrying out of development on the land.

Port Stephens Development Control Plan 2014.

**2. Zoning and land use under relevant Local Environmental Plan(s)**
What is the identity of the zoning for the land?

IN1 General Industrial

**Land Use Table – IN1 General Industrial**

(a) The land is zoned IN1 General Industrial under the provisions of Part 2 in the Port Stephens Local Environmental Plan 2013.

(b) **Item 2 – Permitted without consent**

Nil

(c) **Item 3 – Permitted with consent**

Airstrips; Boat building and repair facilities; Boat launching ramps; Boat sheds; Correctional centres; Crematoria; Depots; Environmental facilities; Environmental protection works; Flood mitigation works; Freight transport facilities; Garden centres; General industries; Hardware and building supplies; Heavy industrial storage establishments; Heavy industries; Helipads; Heliports; Highway service centres; Industrial retail outlets; Industrial training facilities; Jetties; Landscaping material supplies; Light industries; Mortuaries; Neighbourhood shops; Oyster aquaculture; Places of public worship; Plant nurseries; Port facilities; Research stations; Restricted premises; Roads; Rural supplies; Sawmill or log processing works; Service station; Sex services premises; Signage; Stock and sale yards; Storage premises; Tank-based aquaculture; Timber yards; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Warehouse or distribution centres; Water supply systems; Wharf or boating facilities; Wholesale supplies

(d) **Item 4 - Prohibited**

Pond-based aquaculture; Any development not specified in item 2 or 3

(e) **Development Standard for the erection of a dwelling-house**

No development standard that fixes a minimum land dimension for the erection of a dwelling-house applies to the land.

(f) Does the land include or comprise a critical habitat?
Port Stephens Local Environmental Plan 2013 does not identify the land as including or comprising critical habitat.

(g) Is the land in a heritage conservation area?
The land is not located within a heritage conservation area under the Port Stephens Local Environmental Plan 2013.

(h) Is an item of environmental heritage situated on the land?

The land is not identified as containing an item of environmental heritage significance under the provisions in Port Stephens Local Environmental Plan 2013.

Note. The land subject of this certificate does not have a site specific clause applying to it.

**2A. Zoning and land use under *State Environmental Planning Policy (Sydney Region Growth Centres) 2006***

Not applicable to the Port Stephens Local Government Area.

**3. Complying Development**

Whether or not the land to which the certificate relates is land on which complying development may be carried out under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*?

Housing Code
Complying development under the General Housing Code MAY be carried out on the land.

Inland Code
Complying development under the Inland Code MAY be carried out on the land.

Rural Housing Code
Complying development under the Rural Housing Code MAY be carried out on the land.

Low Rise Medium Denisty Housing Code
Complying development under the Low Rise Medium Density Housing Code MAY be carried out on the land.

Greenfield Housing Code
Complying development under the Greenfield Housing Code MAY be carried out on the land.

Housing Alterations Code
Complying development under the Housing Alterations Code MAY be carried out on the land.

General Development Code
Complying development under the General Development Code MAY be carried out on the land.

Commercial and Industrial Alterations Code
Complying development under the Commercial and Industrial alterations Code MAY be carried out on the land.

Commercial and Industrial (New Buildings and Additions) Code
Complying development under the Commercial and Industrial (New Buildings and Additions) Code MAY be carried out on the land.

Container Recycling Facilities Code
Complying development under the Container Recycling Facilities code MAY be carried out on the land.

Subdivisions Code
Complying development under the Subdivision Code MAY be carried out on the land.

Demolition Code
Complying development under the Demolition Code MAY be carried out on the land.

Fire Safety Code
Complying development under the Fire Safety Code MAY be carried out on the land.

**Note.** If the land is a lot to which the Housing Code, Rural Housing Code, Low Rise Medium Density Housing Code, Greenfield Housing Code, Housing Alterations Code, General Development Code, or Commercial and Industrial (New Buildings and Additions) Code (within the meaning of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* applies, complying development may be carried out on any part of the lot that is not affected by the provisions of clause 1.19 of that Policy

**4.** (Repealed)

**4A.** (Repealed)

**4B. Annual charges under *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works**

The land is not subject to annual charges under section 496B of the *Local Government Act 1993* for coastal protection services relating to existing coastal protection works to which the owner (or any previous owner) of the land has consented.

**Note.** "existing coastal protection works" are works to reduce the impact of coastal hazards on land (such as seawalls, revetments, groynes and beach nourishment) that existed before the commencement of section 553B of the *Local Government Act 1993.*

**5. Mine Subsidence**
Whether or not the land is proclaimed to be a mine subsidence district within the meaning of section 15 of the *Mine Subsidence Compensation Act 1961* or within an area declared to be a mine subsidence district under the *Coal Mine Subsidence Compensation Act 2017*.

The land is not within a proclaimed or declared mine subsidence district.

**6. Road widening and road realignment**
Council's records indicate that the land the subject of this Certificate is not affected by any road widening or road realignment under:- (1) Section 25 of the Roads Act 1993; or (2) any environmental planning instrument; or (3) any resolution of the Council.

**7. Council and other public authority policies on hazard risk restrictions**
Council's records indicate that the land subject of this certificate IS NOT affected by RAAF Base Williamtown & Salt Ash Weapons Range 2025 ANEF (10th August 2011); or the Aircraft Noise Planning Area within Port Stephens Development Control Plan 2014 - Chapter B7 Aircraft Noise for Buildings.

**7A. Flood related development controls information**

MINIMAL RISK FLOOD PRONE LAND - Development on the land or part of the land for the purposes of critical emergency response, recovery facilities and infrastructure and development which are particularly vulnerable to emergency response including group homes, seniors housing and child care facilities is subject to flood related development controls. If you wish to apply for a Flood Certificate, please refer to Council's Flood Certificate Information on our website at www.portstephens.nsw.gov.au

**8. Land reserved for acquisition**

Whether or not any environmental planning instrument or proposed environmental planning instrument makes provision in relation to the acquisition of the land by a public authority, as referred to in Section 3.15 of the Environmental Planning and Assessment Act 1979 (the Act).

The Port Stephens Local Environmental Plan 2013 DOES NOT provide for the acquisition of this land, or part thereof, by a public authority as referred to in Section 3.15 of the Act.

**9. Contributions plans**

The name of each contributions plan applying to the land

* Port Stephens Local Infrastructure Contributions Plan 2020
* Port Stephens Fixed Local Infrastructure Contributions Plan 2020

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**Note.** These documents specify development contributions required towards the cost of providing additional community services or facilities if a property is developed. They are available on request from Council or can be viewed www.portstephens.nsw.gov.au.

**9A. Biodiversity certified land**

If the land is biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016*, a statement to that effect.

No

**Note.** Biodiversity certified land includes land certified under Part 7AA of the *Threatened Species Conservation Act 1995* that is taken to be certified under Part 8 of the *Biodiversity Conservation Act 2016*.

**10. Biodiversity stewardship sites**

If the land is a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016*, a statement to that effect (but only if the council has been notified of the existence of the agreement by the Chief Executive of the Office of Environment and Heritage).

No

**Note.** Biodiversity stewardship agreements include biobanking agreements under Part 7A of the *Threatened Species Conservation Act 1995* that are taken to be biodiversity stewardship agreements under Part 5 of the *Biodiversity Conservation Act 2016*.

**10A. Native vegetation clearing set asides**

If the land contains a set aside area under section 60ZC of the *Local Land Services Act 2013*, a statement to that effect (but only if the council has been notified of the existence of the set aside area by Local Land Services or it is registered in the public register under that section).

The land DOES NOT contain a set aside area under section 60ZC of the Local Land Services Act 2013.

**11. Bush fire prone land**

Whether or not some, all or none of the land is bush fire prone land.

Part of the land is identified as bush fire prone land in Council's records. Further details of any applicable restrictions on development of the land may be obtained on application to Council. For further information, please contact Council's Duty Officer by telephoning 49880115.

**12. Property vegetation plans**

If the land is land to which a property vegetation plan under the *Native Vegetation Act 2003* (and that continues in force) applies, a statement to that effect (but only if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act).

Council has not been notified of any Property Vegetation Plans under the Native Vegetation Act 2003 (and that continues in force) that affect the land to which this certificate applies.

**13. Orders under *Trees (Disputes Between Neighbours) Act 2006***

Whether an order has been made under the *Trees (Disputes Between Neighbours) Act 2006* to carry out work in relation to a tree on the land (but only if the council has been notified of the order).

The land is not affected by an order under the *Trees (Disputes Between Neighbours) Act 2006* (of which Council is aware).

**14. Directions under Part 3A**

Whether there is a direction by the Minister in force under section 75P(2)(c1) of the Act.

The land is not affected by a direction by the Minister, in force under section 75P(2)(c1) of the *Environmental Planning and Assessment Act 1979*.

**15. Site compatibility certificates and conditions for seniors housing**

If the land is land to which *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* applies:

(a) Whether or not Council is aware of a current site compatibility certificate (seniors housing), in respect of the proposed development on the land.

Council is not aware of a site compatibility certificate (seniors housing) issued in respect of the subject land.

(b) Whether or not any terms of a kind referred to in clause 18(2) of that Policy that have been imposed as a condition of consent to a development application granted after October 2007 in respect of the land.

No terms referred to in clause 18(2) of the policy have been imposed as a condition of development consent in respect of the land to which this certificate relates.

**16. Site compatibility certificates for infrastructure, schools or TAFE establishments**

Whether or not Council is aware of a valid site compatibility certificate (infrastructure) or site compatibility certificate (schools, or TAFE establishments) in respect of proposed development on the land.

Council is not aware of a valid site compatibility certificate (infrastructure) or site compatibility certificate (schools, or TAFE establishments) in respect of proposed development on the land.

**17. Site compatibility certificates and conditions for affordable rental housing**

(1) Whether or not Council is aware of a current site compatibility certificate (affordable rental housing) in respect of proposed development on the land.

Council is not aware of a current site compatibility certificate issued under *State Environmental Planning Policy (Affordable Rental Housing) 2009*.

(2) Whether or not any terms of a kind referred to in clause 17 (1) or 38 (1) of *State Environmental Planning Policy (Affordable Rental Housing) 2009* that have been imposed as a condition of consent to a development application in respect of the land.

The land is not affected by any terms of a kind (of which Council is aware) referred to in clause 17(1) or 38(1) of *State Environmental Planning Policy (Affordable Rental Housing) 2009* that have been imposed as conditions of consent to a development application granted after 11th October, 2007 in respect of the land.

**18. Paper subdivison information**

(1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.
(2) The date of any subdivision order that applies to the land.
(3) Words and expressions used in this clause have the same meaning as they have in Part 16C of *Environmental Planning and Assessment Regulation 2000*.

Not applicable.

**19. Site verification certificates**

Whether or not Council is aware of a current site verification certificate, in respect of the land.

Council is not aware of a current site verification certificate in respect of the land.

**20. Loose-fill asbestos insulation**

Whether or not the land includes any residential premises (as defined in Division 1A of Part 8 of the *Home Building Act 1989*) that are listed on a register of residential premises that contain or have contained loose-fill asbestos insulation.

The land DOES NOT include any residential dwelling identified on the Loose-Fill Asbestos Insulation Register as containing loose-fill asbestos ceiling insulation. For further information, please contact Department of Fair Trading by telephoning 13 77 88 or go to their website at www.fairtrading.nsw.gov.au.

**21. Affected building notices and building product rectification orders**

(a) Whether nor not there is any affected building notice of which the council is aware that is in force in respect of the land.
There is no affected building notice in force in respect of the land.

A statement of:

(b) Whether there is any building product rectification order of which the council is aware that is in force in respect of the land and has not been fully complied with.

No

(c) Whether any notice of intention to make a building product rectification order of which the council is aware has been given in respect of the land and is outstanding.

No

**Additional matters**

**Note.** The following matters are prescribed by section 59 (2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate:

(a) Whether or not the land to which the certificate relates is significantly contaminated land within the meaning of that Act.
(b) Whether or not the land to which the certificate relates is subject to a management order within the meaning of that Act.
(c) Whether or not the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of the Act.
(d) Whether or not the land to which this certificate relates is subject to an ongoing maintenance order within the meaning of that Act.
(e) Whether or not the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act – if a copy of such statement has been provided at any time to the local authority issuing the certificate.

There are no prescribed matters under section 59(2) of the Contaminated Land Management Act 1997 to be disclosed.

## PART B: INFORMATION PROVIDED UNDER SECTION 10.7(5)

This information is provided in accordance with section 10.7(5) of the *Environmental Planning and Assessment Act 1979*. Section 10.7(6) states that Council shall not incur any liability in respect of advice provided in good faith pursuant to section 10.7(5) of the Act. If this information is to be relied upon, it should be independently checked.

**Heritage**
Port Stephens Council must take into consideration the likely effect of proposed development on the heritage significance of a heritage item, heritage conservation area, archaeological site or potential archaeological site, and on its setting, when determining an application for consent to carry out development on land in its vicinity. Please contact Council's Development Assessment and Compliance Section by telephoning 49880115.

**Aboriginal Archaelogy**

When determining a development application on known or potential archaeological sites of both Aboriginal and non-Aboriginal heritage significance, Port Stephens Council must consider an assessment of how the proposed development would affect the conservation of the site and any relic known or reasonably likely to be located at the site. Please contact Council's Development Assessment and Compliance Section on 49880115 for more information.

**Tomago Aluminium Smelter Buffer Zone**
This property is located within the Tomago Aluminium Smelter Buffer zone. Tomago Aluminium Company Pty Ltd are required to take all reasonable steps to acquire certain properties within this buffer zone. Please contact the Company Secretary, Tomago Aluminium Company Pty Limited, PO Box 405, Raymond Terrace NSW 2324 for further information.

**Aircraft Noise**
All areas of the Port Stephens Local Government Area are now, or are forecast to be, affected by aircraft noise from time to time. Further information concerning the degree of impact of noise from aircraft can be obtained by contacting Council's Strategy and Environment Section by telephoning 49880326.

**Koala Habitat**
Parts of the Port Stephens Local government Area are affected by Koala Habitat and subject to the Port Stephens Comprehensive Koala Plan of Management 2002 made under State Environmental Planning Proposal No. 44. Further information can be obtained from Council's Strategy & Environment Section on 49880326 or email plancert@portstephens.nsw.gov.au.

**Invasive Species**
Parts of the Port Stephens Local Government Area contain plants that pose a risk according to the *Biosecurity Act 2015* which may restrict the use of the land. For further information please contact Council's Strategy & Environment Section on 4988 0326 or email weeds@portstephens.nsw.gov.au

**Development consents relating to the land**
Please contact Customer Relations on (02) 4988 0255, for any enquiries regarding development consent over the land in the past 5 years.

Issued by Port Stephens Council Development Services Group,
on behalf of **Wayne Wallis,General Manager**

# Appendix D

## EPA Search Results

**Contaminated land**

+ Management of contaminated land
+ Consultants and site auditor scheme
+ Underground petroleum storage systems
Guidelines under the CLM Act
NEPM amendment
+ Further guidance
– Record of notices
About the record
Search the record
Search tips
Disclaimer
List of NSW contaminated sites notified to EPA
Frequently asked questions
Forms
+ Other contamination issues
+ Contaminated Land Management Program

Home Contaminated land Record of notices

## Search results

Your search for: Suburb: TOMAGO

Matched 1 notice relating to 1 site.

Search Again Refine Search

| Suburb | Address | Site Name | Notices related to this site |
|---|---|---|---|
| TOMAGO | 25 School DRIVE | Former Hydromet Site | 1 former |

Page 1 of 1

6 March 2020

| Number | Name | Location | Type | Status | Issued date |
|---|---|---|---|---|---|
| 1588347 | | 576-638 TOMAGO ROAD, TOMAGO, NSW 2322 | s.58 Licence Variation | Pending | 14-Nov-19 |
| 20130 | AGL UPSTREAM INVESTMENTS PTY LIMITED | 5 Old Punt Road, TOMAGO, NSW 2322 | POEO licence | Issued | 20-Jul-12 |
| 1531115 | AGL UPSTREAM INVESTMENTS PTY LIMITED | 5 Old Punt Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 8-Jul-15 |
| 1539133 | AGL UPSTREAM INVESTMENTS PTY LIMITED | 5 Old Punt Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 12-Jul-16 |
| 1564088 | AGL UPSTREAM INVESTMENTS PTY LIMITED | 5 Old Punt Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 30-May-18 |
| 11807 | AMPCONTROL SERVICE (NSW) PTY LTD | 8 MARTIN DRIVE, TOMAGO, NSW 2322 | POEO licence | Surrendered | 15-May-03 |
| 1085060 | AMPCONTROL SERVICE (NSW) PTY LTD | 8 MARTIN DRIVE, TOMAGO, NSW 2322 | s.80 Surrender of a Licence | Issued | 24-Apr-08 |
| 1015074 | AUSTRALCHEM PTY LTD | 606 TOMAGO ROAD, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 14-Feb-02 |
| 1032444 | AUSTRALCHEM PTY LTD | 606 TOMAGO ROAD, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 28-Feb-04 |
| 1512518 | CBI Constructors Pty Ltd | 5 Old Punt Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 21-Mar-13 |
| 1517956 | CBI Constructors Pty Ltd | 5 Old Punt Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 25-Nov-13 |
| 2491 | CHEMPROD NOMINEES PROPRIETARY LIMITED | 109 ENTERPRISE DRIVE, TOMAGO, NSW 2322 | POEO licence | Issued | 6-Jun-00 |
| 1009649 | CHEMPROD NOMINEES PROPRIETARY LIMITED | 109 ENTERPRISE DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 29-Jul-01 |
| 1012060 | CHEMPROD NOMINEES PROPRIETARY LIMITED | 109 ENTERPRISE DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 11-Oct-01 |
| 1019727 | CHEMPROD NOMINEES PROPRIETARY LIMITED | 109 ENTERPRISE DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 3-Sep-02 |
| 1022090 | CHEMPROD NOMINEES PROPRIETARY LIMITED | 109 ENTERPRISE DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 24-Dec-02 |
| 1025783 | CHEMPROD NOMINEES PROPRIETARY LIMITED | 109 ENTERPRISE DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 18-Mar-03 |
| 1071360 | CHEMPROD NOMINEES PROPRIETARY LIMITED | 109 ENTERPRISE DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 2-May-07 |
| 1119209 | CHEMPROD NOMINEES PROPRIETARY LIMITED | 109 ENTERPRISE DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 18-Oct-10 |

| Number | Name | Location | Type | Status | Issued date |
|---|---|---|---|---|---|
| 1513224 | CHEMPROD NOMINEES PROPRIETARY LIMITED | 109 ENTERPRISE DRIVE, TOMAGO, NSW 2322 | Compliance Audit | Complete | 2-Apr-13 |
| 1523056 | CHEMPROD NOMINEES PROPRIETARY LIMITED | 109 ENTERPRISE DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 29-Oct-14 |
| 1535809 | CHEMPROD NOMINEES PROPRIETARY LIMITED | 109 ENTERPRISE DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 7-Jan-16 |
| 1543021 | CHEMPROD NOMINEES PROPRIETARY LIMITED | 109 ENTERPRISE DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 17-Oct-16 |
| 1569392 | CHEMPROD NOMINEES PROPRIETARY LIMITED | 109 ENTERPRISE DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 6-Nov-18 |
| 20652 | CLEAN VALLEY PTY LTD | 7 Enterprise Drive, TOMAGO, NSW 2322 | POEO licence | Surrendered | 9-Nov-15 |
| 3085782022 | CLEAN VALLEY PTY LTD | 7 Enterprise Drive, TOMAGO, NSW 2322 | Penalty Notice | Issued | 24-Apr-17 |
| 3085782013 | CLEAN VALLEY PTY LTD | 7 Enterprise Drive, TOMAGO, NSW 2322 | Penalty Notice | Issued | 24-Apr-17 |
| 1581942 | CLEAN VALLEY PTY LTD | 7 Enterprise Drive, TOMAGO, NSW 2322 | s.80 Surrender of a Licence | Issued | 15-Jul-19 |
| 1531498 | Custom Chemicals Pty Ltd | 49 School Road, TOMAGO, NSW 2322 | s.91 Clean Up Notice | Issued | 19-Jun-15 |
| 12014 | HUNTER GALVANIZING PTY LIMITED | 13 OLD PUNT ROAD, TOMAGO, NSW 2322 | POEO licence | Issued | 9-Feb-04 |
| 1035674 | HUNTER GALVANIZING PTY LIMITED | 13 OLD PUNT ROAD, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 17-May-04 |
| 1096014 | HUNTER GALVANIZING PTY LIMITED | 13 OLD PUNT ROAD, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 11-May-09 |
| 1112471 | HUNTER GALVANIZING PTY LIMITED | 13 OLD PUNT ROAD, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 16-Jul-10 |
| 1502169 | HUNTER GALVANIZING PTY LIMITED | 13 OLD PUNT ROAD, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 14-Feb-12 |
| 5986 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | POEO licence | Issued | 17-Jul-00 |
| 1513292 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 10-May-13 |
| 1518448 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 6-Jan-14 |
| 3085774744 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | Penalty Notice | Issued | 4-Aug-14 |
| 3085774753 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | Penalty Notice | Issued | 4-Aug-14 |
| 1523609 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.91 Clean Up Notice | Issued | 4-Aug-14 |
| 1524608 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.110 Variation of Clean Up Notice | Issued | 29-Aug-14 |
| 1525500 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.110 Variation of Clean Up Notice | Issued | 9-Oct-14 |
| 1534574 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 26-Oct-15 |

| Number | Name | Location | Type | Status | Issued date |
|---|---|---|---|---|---|
| 1534988 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.91 Clean Up Notice | Issued | 30-Oct-15 |
| 1535203 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.110 Revocation of Clean Up Notice | Issued | 30-Oct-15 |
| 1535990 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.91 Clean Up Notice | Issued | 3-Dec-15 |
| 1538138 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.110 Revocation of Clean Up Notice | Issued | 17-Feb-16 |
| 1537716 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.91 Clean Up Notice | Issued | 17-Feb-16 |
| 1538805 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.110 Variation of Clean Up Notice | Issued | 10-Mar-16 |
| 3085779410 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | Penalty Notice | Issued | 13-May-16 |
| 1544417 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.91 Clean Up Notice | Issued | 28-Sep-16 |
| 1549288 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.91 Clean Up Notice | Issued | 10-Feb-17 |
| 1549661 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.96 Prevention Notice | Issued | 23-Feb-17 |
| 3173523266 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | Penalty Notice | Issued | 7-Sep-17 |
| 3173523275 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | Penalty Notice | Issued | 7-Sep-17 |
| 1572786 | HYDROMET CORPORATION PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.80 Surrender of a Licence | Pending | 22-Nov-18 |
| 12226 | JEFFERY RAYMOND O'NEILL | Kooragang Island Industrial & Waste Emplacement Site & Tomago Site, TOMAGO, NSW 2322 | POEO licence | Revoked | 3-Dec-04 |
| 1068766 | JEFFERY RAYMOND O'NEILL | Kooragang Island Industrial & Waste Emplacement Site & Tomago Site, TOMAGO, NSW 2322 | s.79 Revocation of a Licence | Issued | 18-Jan-07 |
| 20254 | Midal Cables International Pty Ltd | 21D School Drive, TOMAGO, NSW 2322 | POEO licence | Surrendered | 7-Jun-13 |
| 1515974 | Midal Cables International Pty Ltd | 21D School Drive, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 20-Aug-13 |
| 1520579 | Midal Cables International Pty Ltd | 21D School Drive, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 27-Mar-14 |
| 1531127 | Midal Cables International Pty Ltd | 21D School Drive, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 16-Jul-15 |
| 1557902 | Midal Cables International Pty Ltd | 21D School Drive, TOMAGO, NSW 2322 | s.80 Surrender of a Licence | Issued | 22-Nov-17 |
| 1004886 | MINMET OPERATIONS PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 19-May-01 |
| 1011695 | MINMET OPERATIONS PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 26-Oct-01 |
| 1026094 | MINMET OPERATIONS PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 16-Jul-04 |
| 1106085 | MINMET OPERATIONS PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 9-Nov-09 |
| 1127243 | MINMET OPERATIONS PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 12-Jul-11 |
| 1502888 | MINMET OPERATIONS PTY LIMITED | 25 SCHOOL DRIVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 3-Feb-12 |
| 20585 | NEWCASTLE RECYCLING (NSW) PTY LTD | 29 Laverick Ave, TOMAGO, NSW 2322 | POEO licence | Issued | 26-Aug-15 |
| 3085781930 | NEWCASTLE RECYCLING (NSW) PTY LTD | 29 Laverick Ave, TOMAGO, NSW 2322 | Penalty Notice | Issued | 20-Apr-17 |
| 1525875 | Newcastle Waste Recycling PTY LTD | 509 Tomago Road, TOMAGO, NSW 2322 | s.91 Clean Up Notice | Issued | 27-Oct-14 |

| Number | Name | Location | Type | Status | Issued date |
|---|---|---|---|---|---|
| 1527079 | Newcastle Waste Recycling PTY LTD | TOMAGO, NSW 2322 | s.91 Clean Up Notice | Issued | 22-Dec-14 |
| 1541393 | NWR Staff Services Pty Ltd | 509 Tomago Road, TOMAGO, NSW 2322 | s.91 Clean Up Notice | Issued | 8-Jun-16 |
| 1026822 | PATRICK DISTRIBUTION PTY LIMITED | TOMAGO ROAD, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 23-Jun-03 |
| 20009 | QUANTUM METALS PTY LTD | 326 Tomago Road, TOMAGO, NSW 2322 | POEO licence | Surrendered | 18-Jan-12 |
| 1505284 | QUANTUM METALS PTY LTD | 326 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 10-Apr-12 |
| 1514122 | QUANTUM METALS PTY LTD | 326 Tomago Road, TOMAGO, NSW 2322 | s.80 Surrender of a Licence | Issued | 3-Jul-13 |
| 21296 | RECYCLED CONCRETE PRODUCTS PTY. LIMITED | 509 TOMAGO ROAD, TOMAGO, NSW 2322 | POEO licence | Pending | |
| 1573603 | RECYCLED CONCRETE PRODUCTS PTY. LIMITED | 509 Tomago Road, TOMAGO, NSW 2322 | s.91 Clean Up Notice | Issued | 31-Jan-19 |
| 1589431 | RECYCLED CONCRETE PRODUCTS PTY. LIMITED | 509 Tomago Road, TOMAGO, NSW 2322 | s.110 Variation of Clean Up Notice | Issued | 20-Dec-19 |
| 1550447 | RECYCLING AND WASTE MANAGEMENT PTY LTD | 509 Tomago Road, TOMAGO, NSW 2322 | s.91 Clean Up Notice | Issued | 24-Mar-17 |
| 3085782729 | RECYCLING AND WASTE MANAGEMENT PTY LTD | 509 Tomago Road, TOMAGO, NSW 2322 | Penalty Notice | Issued | 19-Jun-17 |
| 1576119 | RECYCLING AND WASTE MANAGEMENT PTY LTD | 509 Tomago Road, TOMAGO, NSW 2322 | s.110 Revocation of Clean Up Notice | Issued | 14-Feb-19 |
| 3085782774 | REDICRETE PTY LIMITED | 25B School Drive , TOMAGO, NSW 2322 | Penalty Notice | Issued | 21-Jul-17 |
| 13269 | REGAIN SERVICES PTY LTD | 576-638 TOMAGO ROAD, TOMAGO, NSW 2322 | POEO licence | Issued | 5-Nov-12 |
| 1518649 | REGAIN SERVICES PTY LTD | 576-638 TOMAGO ROAD, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 17-Jun-14 |
| 1551338 | REGAIN SERVICES PTY LTD | 576-638 TOMAGO ROAD, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 17-May-17 |
| 1562006 | REGAIN SERVICES PTY LTD | 576-638 TOMAGO ROAD, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 16-Mar-18 |
| 370 | RZM PTY. LIMITED | 11 PACIFIC HIGHWAY, TOMAGO, NSW 2322 | POEO licence | Surrendered | 15-Jan-01 |
| 1017336 | RZM PTY. LIMITED | 11 PACIFIC HIGHWAY, TOMAGO, NSW 2322 | s.80 Surrender of a Licence | Issued | 21-May-02 |
| 6545 | SPECIALIST CRUSHING & SCREENING SERVICES PTY LTD | 12 ENTERPRISE DRIVE , TOMAGO, NSW 2322 | POEO licence | Surrendered | 7-Aug-00 |

| Number | Name | Location | Type | Status | Issued date |
|---|---|---|---|---|---|
| 1010315 | SPECIALIST CRUSHING & SCREENING SERVICES PTY LTD | 12 ENTERPRISE DRIVE , TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 12-Aug-01 |
| 1046589 | SPECIALIST CRUSHING & SCREENING SERVICES PTY LTD | 12 ENTERPRISE DRIVE , TOMAGO, NSW 2322 | s.80 Surrender of a Licence | Issued | 30-May-05 |
| 4000 | TOLL NORTH PTY LTD | TOMAGO ROAD, TOMAGO, NSW 2322 | POEO licence | Surrendered | 11-Sep-00 |
| 1124410 | TOLL NORTH PTY LTD | TOMAGO ROAD, TOMAGO, NSW 2322 | s.80 Surrender of a Licence | Issued | 8-Feb-11 |
| 20125 | TOLL NORTH PTY LTD | 12 Old Punt Road, TOMAGO, NSW 2322 | POEO licence | Issued | 12-Jul-12 |
| 1531101 | TOLL NORTH PTY LTD | 12 Old Punt Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 11-Nov-16 |
| 1551885 | TOLL NORTH PTY LTD | 12 Old Punt Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 3-Jul-17 |
| 1567495 | TOLL NORTH PTY LTD | 12 Old Punt Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 3-Sep-18 |
| 6163 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | POEO licence | Issued | 20-Apr-00 |
| 1014382 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 25-Jan-02 |
| 1016532 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 18-Apr-02 |
| 1018042 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 5-Nov-03 |
| 1041989 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 12-Nov-04 |
| 1044367 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 8-Mar-05 |
| 1056839 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 17-Mar-06 |
| 1061531 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 31-Aug-06 |
| 1097536 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 24-Apr-09 |
| 1102846 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 11-Aug-09 |
| 1107277 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 1-Jul-10 |
| 1119919 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 11-Feb-11 |

| Number | Name | Location | Type | Status | Issued date |
|---|---|---|---|---|---|
| 1501708 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 26-Oct-11 |
| 1504909 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 15-May-12 |
| 1509937 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | Compliance Audit | Complete | 5-Nov-12 |
| 1509839 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 5-Nov-12 |
| 1517795 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 30-Oct-14 |
| 1558503 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 18-Dec-17 |
| 1562052 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 16-Mar-18 |
| 1571299 | TOMAGO ALUMINIUM COMPANY PTY LTD | 576-638 Tomago Road, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 24-Oct-18 |
| 2002 | TRI GROUP INVESTMENTS PTY LIMITED | 606 TOMAGO ROAD, TOMAGO, NSW 2322 | POEO licence | Surrendered | 7-Feb-00 |
| 1091850 | TRI GROUP INVESTMENTS PTY LIMITED | 606 TOMAGO ROAD, TOMAGO, NSW 2322 | s.80 Surrender of a Licence | Issued | 5-Sep-08 |
| 12806 | TROPIC TOMAGO PTY LIMITED | 25-27 Kennington Drive, TOMAGO, NSW 2322 | POEO licence | No longer in force | 18-Dec-07 |
| 5007 | WHITELEY CORPORATION PTY LTD | 19-23 LAVERICK AVE, TOMAGO, NSW 2322 | POEO licence | Issued | 6-Sep-00 |
| 1510413 | WHITELEY CORPORATION PTY LTD | 19-23 LAVERICK AVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 25-Feb-13 |
| 1548852 | WHITELEY CORPORATION PTY LTD | 19-23 LAVERICK AVE, TOMAGO, NSW 2322 | s.58 Licence Variation | Issued | 6-Feb-17 |

# Appendix E

## Historic Titles

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
17/2/2020 9:48AM

FOLIO: 5/270328

First Title(s): OLD SYSTEM
Prior Title(s): 71/634535 3022/1031095

| Recorded | Number | Type of Instrument | C.T. Issue |
|---|---|---|---|
| 20/11/2002 | DP270328 | DEPOSITED PLAN | FOLIO CREATED EDITION 1 |
| 2/4/2003 | 9501059 | DISCHARGE OF MORTGAGE | |
| 2/4/2003 | 9501060 | TRANSFER | EDITION 2 |
| 6/5/2011 | AG216557 | TRANSFER INCLUDING COVENANT | |
| 6/5/2011 | AG216558 | MORTGAGE | EDITION 3 |
| 13/3/2012 | DP270328 | DEPOSITED PLAN | FOLIO CANCELLED |

*** END OF SEARCH ***

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SEARCH DATE
12/2/2020 3:24PM

FOLIO: 7/270328

First Title(s): OLD SYSTEM
Prior Title(s): 71/634535 3022/1031095

| Recorded | Number | Type of Instrument | C.T. Issue |
|---|---|---|---|
| 20/11/2002 | DP270328 | DEPOSITED PLAN | FOLIO CREATED EDITION 1 |
| 2/4/2003 | 9501059 | DISCHARGE OF MORTGAGE | |
| 2/4/2003 | 9501060 | TRANSFER | EDITION 2 |

*** END OF SEARCH ***



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LAND REGISTRY SERVICES

# Title Search

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NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 7/270328

| SEARCH DATE | TIME | EDITION NO | DATE |
|---|---|---|---|
| 12/2/2020 | 3:15 PM | 2 | 2/4/2003 |

LAND

LOT 7 IN COMMUNITY PLAN DP270328
AT TOMAGO
LOCAL GOVERNMENT AREA PORT STEPHENS
PARISH OF STOCKTON COUNTY OF GLOUCESTER
TITLE DIAGRAM DP270328

FIRST SCHEDULE

TOMAGO ALUMINIUM COMPANY PTY LIMITED (T 9501060)

SECOND SCHEDULE (9 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 INTERESTS RECORDED ON REGISTER FOLIO 1/270328
3 ATTENTION IS DIRECTED TO THE MANAGEMENT STATEMENT OF THE COMMUNITY SCHEME FILED WITH THE COMMUNITY PLAN
4 DP634535 RESTRICTION(S) ON THE USE OF LAND AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
V956701 VARIATION
5 BK 1882 NO 182 LAND EXCLUDES MINERALS AND IS SUBJECT TO RIGHTS TO MINE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
6 DP270328 EASEMENT FOR ELECTRICITY LINE 4.5, 7 METRES WIDE AND VARIABLE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
7 DP270328 EASEMENT FOR ELECTRICITY LINE 4.5, 7 METRES WIDE AND VARIABLE APPURTENANT TO THE LAND ABOVE DESCRIBED
8 DP270328 EASEMENT FOR DRAINAGE OF WATER 4.5 METRE(S) WIDE AND VARIABLE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
9 DP270328 RESTRICTION(S) ON THE USE OF LAND REFERRED TO AND NUMBERED (6) IN THE S.88B INSTRUMENT

NOTATIONS

NOTE: THE CERTIFICATE OF TITLE FOR THIS FOLIO OF THE REGISTER DOES NOT INCLUDE SECURITY FEATURES INCLUDED ON COMPUTERISED CERTIFICATES OF TITLE ISSUED FROM 4TH JANUARY, 2004. IT IS RECOMMENDED THAT STRINGENT PROCESSES ARE ADOPTED IN VERIFYING THE IDENTITY OF THE PERSON(S) CLAIMING A RIGHT TO DEAL WITH THE LAND COMPRISED IN THIS FOLIO.

END OF PAGE 1 - CONTINUED OVER

FOLIO: 7/270328 PAGE 2
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NOTATIONS (CONTINUED)
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UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***



* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. triSearch an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

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NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
17/2/2020 9:42AM

FOLIO: 8/270328

First Title(s): OLD SYSTEM
Prior Title(s): 71/634535

| Recorded | Number | Type of Instrument | C.T. Issue |
|---|---|---|---|
| 20/11/2002 | DP270328 | DEPOSITED PLAN | FOLIO CREATED EDITION 1 |
| 2/4/2003 | 9501059 | DISCHARGE OF MORTGAGE | |
| 2/4/2003 | 9501060 | TRANSFER | EDITION 2 |

*** END OF SEARCH ***

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LAND REGISTRY SERVICES

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FOLIO: 8/270328

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| SEARCH DATE | TIME | EDITION NO | DATE |
|---|---|---|---|
| 12/2/2020 | 3:15 PM | 2 | 2/4/2003 |

LAND

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LOT 8 IN COMMUNITY PLAN DP270328
AT TOMAGO
LOCAL GOVERNMENT AREA PORT STEPHENS
PARISH OF STOCKTON COUNTY OF GLOUCESTER
TITLE DIAGRAM DP270328

FIRST SCHEDULE

---

TOMAGO ALUMINIUM COMPANY PTY LIMITED (T 9501060)

SECOND SCHEDULE (7 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 INTERESTS RECORDED ON REGISTER FOLIO 1/270328
3 ATTENTION IS DIRECTED TO THE MANAGEMENT STATEMENT OF THE COMMUNITY SCHEME FILED WITH THE COMMUNITY PLAN
4 DP634535 RESTRICTION(S) ON THE USE OF LAND
V956701 VARIATION
5 DP270328 EASEMENT FOR ELECTRICITY LINE 4.5, 7 METRES WIDE AND VARIABLE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
6 DP270328 EASEMENT FOR ELECTRICITY LINE 4.5, 7 METRES WIDE AND VARIABLE APPURTENANT TO THE LAND ABOVE DESCRIBED
7 DP270328 RESTRICTION(S) ON THE USE OF LAND REFERRED TO AND NUMBERED (6) IN THE S.88B INSTRUMENT

NOTATIONS

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NOTE: THE CERTIFICATE OF TITLE FOR THIS FOLIO OF THE REGISTER DOES NOT INCLUDE SECURITY FEATURES INCLUDED ON COMPUTERISED CERTIFICATES OF TITLE ISSUED FROM 4TH JANUARY, 2004. IT IS RECOMMENDED THAT STRINGENT PROCESSES ARE ADOPTED IN VERIFYING THE IDENTITY OF THE PERSON(S) CLAIMING A RIGHT TO DEAL WITH THE LAND COMPRISED IN THIS FOLIO.

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
17/2/2020 9:43AM

FOLIO: 11/270328

First Title(s): OLD SYSTEM
Prior Title(s): 5-6/270328

| Recorded | Number | Type of Instrument | C.T. Issue |
|---|---|---|---|
| 13/3/2012 | DP270328 | DEPOSITED PLAN | FOLIO CREATED EDITION 1 |
| 21/1/2014 | DP1192459 | DEPOSITED PLAN | |
| 23/1/2014 | AI307905 | MORTGAGE | |
| 23/1/2014 | AI307906 | POSTPONEMENT OF MORTGAGE | EDITION 2 |
| 18/4/2018 | AN271074 | DISCHARGE OF MORTGAGE | |
| 18/4/2018 | AN271075 | DISCHARGE OF MORTGAGE | |
| 18/4/2018 | AN271076 | TRANSFER | EDITION 3 |

*** END OF SEARCH ***

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NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

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FOLIO: 11/270328

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| SEARCH DATE | TIME | EDITION NO | DATE |
|---|---|---|---|
| 12/2/2020 | 3:15 PM | 3 | 18/4/2018 |

LAND

---

LOT 11 IN COMMUNITY PLAN DP270328
AT TOMAGO
LOCAL GOVERNMENT AREA PORT STEPHENS
PARISH OF STOCKTON COUNTY OF GLOUCESTER
TITLE DIAGRAM DP270328

FIRST SCHEDULE

---

TOMAGO ALUMINIUM COMPANY PTY LIMITED (T AN271076)

SECOND SCHEDULE (14 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 INTERESTS RECORDED ON REGISTER FOLIO 1/270328
3 ATTENTION IS DIRECTED TO THE MANAGEMENT STATEMENT OF THE COMMUNITY SCHEME FILED WITH THE COMMUNITY PLAN
4 DP634535 RESTRICTION(S) ON THE USE OF LAND AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
V956701 VARIATION
5 BK 1882 NO 182 LAND EXCLUDES MINERALS AND IS SUBJECT TO RIGHTS TO MINE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
6 DP270328 EASEMENT FOR ELECTRICITY LINE 4.5, 7 METRES WIDE AND VARIABLE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
7 DP270328 EASEMENT FOR ELECTRICITY LINE 4.5, 7 METRES WIDE AND VARIABLE APPURTENANT TO THE LAND ABOVE DESCRIBED
8 DP270328 RESTRICTION(S) ON THE USE OF LAND REFERRED TO AND NUMBERED (6) IN THE S.88B INSTRUMENT
9 AG216557 COVENANT
10 DP1192459 RIGHT OF ACCESS VARIABLE WIDTH APPURTENANT TO THE LAND ABOVE DESCRIBED
11 DP1192459 RIGHT TO PARK VARIABLE WIDTH APPURTENANT TO THE LAND ABOVE DESCRIBED
12 DP1192459 EASEMENT FOR ELECTRICITY & OTHER PURPOSES 4 METRE(S) AFFECTING THE PART(S) SHOWN SO BURDENED IN DP1192459
13 DP1192459 EASEMENT FOR ELECTRICITY & OTHER PURPOSES 3.3 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN DP1192459
14 DP1192459 EASEMENT FOR ELECTRICITY & OTHER PURPOSES 2 METRE(S) WIDE REFERRED TO AND NUMBERED (6) IN THE S.88B

END OF PAGE 1 - CONTINUED OVER

FOLIO: 11/270328 PAGE 2
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SECOND SCHEDULE (14 NOTIFICATIONS) (CONTINUED)
---

INSTRUMENT AFFECTING THE PART(S) SHOWN SO BURDENED IN DP1192459

NOTATIONS
---

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***



* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. triSearch an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

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NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
17/2/2020 8:54AM

FOLIO: 71/634535

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 15149 FOL 204

| Recorded | Number | Type of Instrument | C.T. Issue |
|---|---|---|---|
| 28/3/1988 | | TITLE AUTOMATION PROJECT | LOT RECORDED FOLIO NOT CREATED |
| 23/9/1988 | | CONVERTED TO COMPUTER FOLIO | FOLIO CREATED CT NOT ISSUED |
| 4/5/1989 | Y291890 | APPLICATION | |
| 4/5/1989 | Y291889 | APPLICATION | |
| 31/10/1989 | Y677316 | VARIATION OF MORTGAGE | EDITION 1 |
| 2/11/1989 | | AMENDMENT: CT DELIVEREE | |
| 8/11/1989 | Y680157 | MORTGAGE | EDITION 2 |
| 8/8/1990 | Z102535 | DISCHARGE OF MORTGAGE | |
| 8/8/1990 | Z102537 | DISCHARGE OF MORTGAGE | |
| 8/8/1990 | Z102539 | DISCHARGE OF MORTGAGE | |
| 8/8/1990 | Z102540 | TRANSFER | EDITION 3 |
| 7/12/1990 | Z386949 | DISCHARGE OF MORTGAGE | EDITION 4 |
| 7/1/1998 | 3594713 | CHANGE OF NAME | |
| 7/1/1998 | 3594714 | LEASE | EDITION 5 |
| 10/2/1999 | 5586864 | DEPARTMENTAL DEALING | EDITION 6 |
| 23/6/2000 | 6882809 | TRANSFER | |
| 23/6/2000 | 6882810 | MORTGAGE | EDITION 7 |
| 5/11/2002 | DP1040315 | WITHDRAWN - PRE-EXAMINATION PLAN | |
| 18/11/2002 | 9134556 | REQUEST | |
| 20/11/2002 | DP270328 | DEPOSITED PLAN | FOLIO CANCELLED |

*** END OF SEARCH ***

JME20005 PRINTED ON 17/2/2020

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NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
17/2/2020 11:28AM

FOLIO: 302/634536

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 15207 FOL 94

| Recorded | Number | Type of Instrument | C.T. Issue |
|---|---|---|---|
| 28/3/1988 | | TITLE AUTOMATION PROJECT | LOT RECORDED<br>FOLIO NOT CREATED |
| 23/9/1988 | | CONVERTED TO COMPUTER FOLIO | FOLIO CREATED<br>CT NOT ISSUED |
| 4/5/1989 | Y291890 | APPLICATION | |
| 4/5/1989 | Y291889 | APPLICATION | |
| 31/10/1989 | Y677316 | VARIATION OF MORTGAGE | EDITION 1 |
| 2/11/1989 | | AMENDMENT: CT DELIVEREE | |
| 8/11/1989 | Y680157 | MORTGAGE | EDITION 2 |
| 8/8/1990 | Z102536 | DISCHARGE OF MORTGAGE | |
| 8/8/1990 | Z102537 | DISCHARGE OF MORTGAGE | |
| 8/8/1990 | Z102539 | DISCHARGE OF MORTGAGE | |
| 8/8/1990 | Z102540 | TRANSFER | EDITION 3 |
| 14/12/1990 | Z386948 | DISCHARGE OF MORTGAGE | EDITION 4 |
| 23/6/2000 | 6882808 | CHANGE OF NAME | |
| 23/6/2000 | 6882809 | TRANSFER | |
| 23/6/2000 | 6882810 | MORTGAGE | EDITION 5 |
| 27/7/2001 | DP1031095 | DEPOSITED PLAN | FOLIO CANCELLED |

*** END OF SEARCH ***

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NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
17/2/2020 9:28AM

FOLIO: 3022/1031095

First Title(s): OLD SYSTEM
Prior Title(s): 302/634536

| Recorded | Number | Type of Instrument | C.T. Issue |
|---|---|---|---|
| 27/7/2001 | DP1031095 | DEPOSITED PLAN | FOLIO CREATED EDITION 1 |
| 5/11/2002 | DP1040315 | WITHDRAWN - PRE-EXAMINATION PLAN | |
| 20/11/2002 | DP270328 | DEPOSITED PLAN | FOLIO CANCELLED |
| 21/11/2002 | 9144956 | DEPARTMENTAL DEALING | |

*** END OF SEARCH ***



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NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
17/2/2020 9:28AM

FOLIO: 3022/1031095

First Title(s): OLD SYSTEM
Prior Title(s): 302/634536

| Recorded | Number | Type of Instrument | C.T. Issue |
|---|---|---|---|
| 27/7/2001 | DP1031095 | DEPOSITED PLAN | FOLIO CREATED EDITION 1 |
| 5/11/2002 | DP1040315 | WITHDRAWN - PRE-EXAMINATION PLAN | |
| 20/11/2002 | DP270328 | DEPOSITED PLAN | FOLIO CANCELLED |
| 21/11/2002 | 9144956 | DEPARTMENTAL DEALING | |

*** END OF SEARCH ***



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Req:R642609 /Doc:BK 2131-415 NO /Rev:10-Mar-2016 /NSW LRS /Prt:17-Feb-2020 11:22 /Seq:1 of 6
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SEE DEPOSITED DEEDS PACKET NO. 36045

SEE DEPOSITED DEEDS PACKET NO. 33447 (Abstract).

NO. 415 BOOK 2131 CONVEYANCE

Ad Valorem Duty N.S.W. Stamp Duties Office Paid. £152.

New South Wales One Pound Five Shillings Stamp Duty J 6 7 50 D.

THIS DEED made the first day of June One thousand nine hundred and fifty BETWEEN JOHN THOMAS McKEE of Sydney in the State of New South Wales Merchant (hereinafter called "the Vendor") of the one part AND COURTAULDS (AUSTRALIA) LIMITED a Company duly incorporated according to the laws of the said State and having its registered office at 7 Wynyard Street, Sydney, aforesaid (hereinafter called "the Purchaser") of the other part

WHEREAS the Vendor is seised for an estate in fee simple in the several pieces of land described in the Schedule hereto

AND WHEREAS the Vendor has agreed to sell and the Purchaser has agreed to purchase the said land

NOW THIS DEED WITNESSETH that in consideration of the sum of Ten shillings (10/-) paid by the Purchaser to the Vendor (the receipt whereof is hereby acknowledged) the Vendor DOTH HEREBY CONVEY unto the Purchaser in fee simple ALL the several pieces of land described in the Schedule hereto TOGETHER WITH all the mines veins seams and beds of coal and minerals of whatsoever nature lying in and under those pieces of land fifthly described in the said Schedule TOGETHER WITH all the rights and powers necessary to work win and carry away the same AND TOGETHER WITH the benefit of a drainage easement for the purpose of draining (inter alia) that portion of the land fifthly described in the Schedule hereto shown as "Tomago" in Registered Plan No.876 (O.S.) by the drains already existing and running to the Hunter River through Lots 3, 2 and 7 as shown on the said Registered Plan AND TOGETHER WITH the benefit as appuretnant to that portion of the land fifthly described in the Schedule hereto shown as "Tomago" in the said Registered Plan in common with the respective owners for the time being of an Estate in fee simple of and in Lots 1, 3, 4, 5, 6, 7 and 8 in the said Registered Plan a right of carriage way a right to lay and maintain water pipes and construct and maintain telephone lines and properly insulated wires for carrying electric power but only at a height of not less than twenty feet from the ground in and over the land marked "right of way" within Lot 2 as shown in the said Registered Plan SUBJECT HOWEVER to the right in the respective owners for the time being of an Estate in fee simple of and in Lots 3, 4 and 5 in the said Registered Plan and of and in that part of Portion 16 of the Parish of Stockton lying to the South East of the road from Hexham to Williamtown to an easement for drainage over and along the drains within that portion of the land fifthly described in the Schedule hereto shown as "Tomago" in the said Registered Plan AND the Vendor HEREBY COVENANTS with the Purchaser that he the Vendor has not executed or done or knowingly suffered or been party or privy to any Deed or thing whereby or by means whereof the lands described in the Schedule hereto or any of the several parcels or any part of any parcel is or

A. Hamilton & Sons
Attorneys for John Thomas McKee

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may be impeached charged affected or encumbered in title estate or otherwise PROVIDED HOWEVER that this Covenant shall be deemed to extend to the acts of the Vendor only.

IN WITNESS whereof the parties hereto have hereto set their hands and seals the day and year first hereinbefore written.

THE SCHEDULE HEREINBEFORE REFERRED TO

FIRSTLY ALL THAT piece or parcel of land in the State of New South Wales County of Gloucester Parish of Stockton and containing by admeasurement twelve acres and nine and a half perches be the same more or less being the Eastern half of allotment two of twenty four acres and nineteen perches of the subdivision of Robert Gordon's seventy three acres forming part of five hundred acres granted to Miss I.W.Snodgrass and Mrs.W.McLean COMMENCING at the North Western corner of allotment three being a point bearing North eighty eight degrees forty seven minutes East seven hundred and twenty links from the North West corner of Gordon's seventy three acres and bounded on the East by the West boundary of allotment three bearing South three minutes East sixty eight chains to the Hunter River thence on the South by the Hunter River westerly one chain eighty links thence on the West by a line bearing North three minutes West sixty eight chains thence on the North by a line bearing North Eighty eight degrees forty seven minutes East one chain eighty links to the point of commencement exclusive of the Road from Raymond Terrace to Stockton as shown on the plan thereon and colored red SAVE AND EXCEPT all mines and minerals in and under the said land subject to the rights and conditions of working the same as contained in Indenture of Lease registered Number 275 Book 67, and

SECONDLY ALL THAT parcel of land containing by admeasurement one acre being around the Well known as Tomago Well situate at Tomago Hunter River in the Colony of New South Wales commencing on the left bank of the Hunter River at a stake twenty chains Easterly along the River Bank from the South extreme of the East boundary line of Mrs. McLean's six hundred and forty acres grant of Kilcoy (an apple-tree marked thirty six links North of the stake) and bounded on the East by a North line of three chains and fifty links on the north by a West line of three chains and twenty five links and on the West by a South line of two chains and seventy links to the River Hunter and on the South by the River Hunter downwards to the stake twenty chains Easterly along the River Bank from the South extreme of the East boundary line of Mrs. McLean's said six hundred and forty acres grant of Kilcoy aforesaid TOGETHER with the right of road one rod in width from the last mentioned point of the Kilcoy property along the River Bank to the said one acre of land ~~AND except the land comprised in a strip 100 feet wide from Mean High Water on the Hunter River reserved by the Crown Grant to the Crown~~, and

Book APH

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THIRDLY. ALL THAT piece or parcel of land containing an area of 39 acres 25 perches or thereabouts situated in the Shire of Port Stephens Parish of Stockton County of Gloucester and State of New South Wales and being part of the land comprised in Certificate of Title Volume 4954 Folio 231 be the hereinafter stated several dimensions all a little more or less commencing at a point on the Northern boundary of Portion 17 of the said Parish bearing Westerly 900 links from the North Eastern corner of the said Portion 17 and bounded thence towards the East by a line bearing South 7420 links to the left bank of the Hunter River thence towards the South by part of that bank upwards about 517 links thence towards the West by a line bearing North 7692 links to the Northern boundary of the said Portion 17 thence towards the North by part of that Northern boundary bearing easterly 517 links to the point of commencement EXCEPTING THEREOUT all those parts of the main road from Hexham to Stockton which fall within the boundaries of the said land ALSO ALL THAT piece or parcel of land containing an area of 36 acres 9½ perches or thereabouts situated as aforesaid and being part of the land comprised in Certificate of Title Volume 4954 Folio 231 be the hereinafter stated several dimensions all a little more or less commencing at the North Western corner of the land in the said Certificate of Title and bounded thence towards the North by part of the Northern boundary of Portion 17 of the said Parish bearing Easterly 540 links thence towards the East by a line bearing Southerly 6800 links to the left bank of the Hunter River thence towards the South by part of that bank upwards about 540 links to the Easterly boundary of the land comprised in Certificate of Title Volume 5176 Folio 184 thence towards the West by the Easterly boundary of Portion 20 of the said Parish being a line bearing Northerly 6800 links to the point of commencement EXCEPTING THEREOUT all those parts of the main road from Hexham to Stockton which fall within the boundaries of the said land, and

FOURTHLY ALL THAT piece or parcel of land containing an area of 21 acres 2 roods or thereabouts situated in the Shire of Port Stephens Parish of Stockton County of Gloucester and State of New South Wales being part of the land comprised in Certificate of Title Volume 4954 Folio 231 be the hereinafter stated several dimensions all a little more or less commencing at a point on the Northern boundary of Portion 17 of the said Parish bearing Westerly 1417 links from the North Eastern corner of the said Portion 17 and bounded thence towards the East by a line bearing South 7692 links to the left Bank of the Hunter River thence towards the South by part of that bank upwards about 283 links thence towards the West by a line bearing North 7709 links to the Northern

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Boundary of Portion 17 aforesaid thence towards the North by part of that Northern boundary bearing easterly 283 links to the point of commencement EXCEPTING THEREOUT all those parts of the main road from Hexham to Stockton which fall within the boundaries of the said land ALSO ALL THAT piece or parcel of land containing an area of 24 acres 3 roods 21 perches or thereabouts situated as aforesaid and being part of the land comprised in the said Certificate of Title Volume 4954 Folio 231 be the hereinafter stated several dimensions all a little more or less commencing at a point on the Northern boundary of Portion 17 of the said Parish bearing Easterly 720 links from the North Western corner of the said Portion and bounded thence towards the North by part of the said Northern boundary of the said Portion 17 bearing Easterly 360 links thence towards the East by a line bearing South 6800 links to the left bank of the Hunter River thence towards the South by that Bank upwards about 360 links thence towards the West by a line bearing North 6800 links to the point of commencement EXCEPTING THEREOUT all those parts of the main road from Hexham to Stockton which fall within the boundaries of the said land, and

FIFTHLY ALL THAT piece or parcel of land containing by admeasurement 14 acres 3 roods 11 perches or thereabouts being part of Portion 7 of the Parish of Stockton County of Gloucester and State of New South Wales and being the lot shown as "Tomago" in Registered Plan No.876 (O.S.) be the hereinafter stated several dimensions all a little more or less commencing at a point on the South Easterly alignment of the road from Hexham to Williamtown being the Westmost corner of Lot 3 of the said Registered Plan and bounded thence towards the North East by South Westerly boundaries of the said Lot 3 being fenced lines bearing successively 131 degrees 40 minutes 288 links and three fifths of a link 105 degrees 20 minutes 660 links and 138 degrees 38 minutes 20 seconds 788 links and three fifths of a link thence towards the South East by a North Westerly boundary of the said Lot 3 being a fenced line bearing 236 degrees 45 minutes 40 seconds 618 links and three fifths of a link thence towards the South West by a North Easterly boundary of the said Lot 3 being a fenced line bearing 270 degrees 26 minutes 836 links and nine tenths of a link to a North Easterly boundary of Lot 2 of the said Registered Plan thence towards the South West by part of that boundary of Lot 2 being a fenced line bearing 344 degrees 33 minutes 184 links and three fifths of a link thence again towards the South West by a North Easterly boundary of Lot 2 being a fenced line bearing 315 degrees 26 minutes 30 seconds 704 links and nine tenths of a link to the South Easterly alignment of the said road thence towards the North West by the said alignments being lines bearing successively 29 degrees 11 minutes 20 seconds 256 links and one tenth of a link 32 degrees 10 minutes 20 seconds 201 links and one tenth of a link and

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53 degrees 59 minutes 30 seconds 355 links and two fifths of a link to the point of commencement ALSO ALL THAT piece or parcel of land containing by admeasurement 121 acres 3 roods or thereabouts being part of Portion 7 at Tomago in the Parish of Stockton (in prior Conveyance erroneously described as Parish of Eldon) County of Gloucester State of New South Wales be the hereinafter mentioned several dimensions a little more or less COMMENCING at a point in the North Western side of the road from Williamtown to Hexham at the South Eastern corner of a Public School site and bounded thence towards the South West and South East by the North Eastern and North Western boundaries of that school site bearing 336 degrees 21 minutes 348.4 links and 246 degrees 21 minutes 400 links respectively thence towards the South West and South by North Eastern and Northern boundaries of Lot 13 on Registered Plan (O.S.) No.876 bearing 316 degrees 21 minutes 3630 links and 269 degrees 54 minutes 548.1 links respectively thence towards the West by part of the Eastern boundary of Portion 17 and an Eastern boundary of Portion 6 bearing 359 degrees 54 minutes 1400 links and 359 degrees 25 minutes 350 links respectively thence towards the North by part of a Southern boundary of Portion 6 aforesaid bearing 89 degrees 10 minutes 3170.5 links thence towards the North East by the South Western boundary of Lot 12 on Registered Plan (O.S.) No. 876 bearing 159 degrees 19½ minutes 3651 links to the road from Williamtown to Hexham aforesaid and thence towards the South East by North Western sides of that road bearing 233 degrees 59½ minutes 475.6 links 212 degrees 10½ minutes 232 links and 209 degrees 11½ minutes 787.8 links respectively to the point of commencement.

SIGNED SEALED AND DELIVERED by the said JOHN THOMAS McKEE by his Attorney Harold Hamilton Moore in the presence of

D.W.O'Reilly
Solicitor
Sydney.

JOHN THOMAS McKEE
by his Attorney
H. HAMILTON MOORE

THE COMMON SEAL of COURTAULDS (AUSTRALIA) LIMITED was hereunto affixed in the presence of two of the Directors who have hereunto signed their names in the presence of

Secretary

Directors

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## STATUTORY DECLARATION

I, HAROLD HAMILTON MOORE of 7 Wynyard Street, Sydney, in the State of New South Wales Solicitor do solemnly and sincerely declare as follows:-

1. I AM the Attorney named in Power of Attorney from John Thomas McKee of 235 Clarence Street Sydney aforesaid merchant dated the Fifteenth day of September One Thousand Nine Hundred and Forty Eight Registered Number 39211 Miscellaneous Register by virtue of which I have this day executed a Deed of Conveyance dated this day between the said John Thomas McKee and Courtaulds (Australia) Limited.

2. I HAVE NOT received any notice or information of the revocation of the said Power of Attorney by death lunacy unsoundness of mind bankruptcy act of the donor or otherwise.

AND I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Oaths Act 1900

SUBSCRIBED AND DECLARED at Sydney this first day of June 1950 Before me } H. Hamilton Moore

A.H. Drury J.P.

New South Wales
To Wit

ADRIAN PETER HENCHMAN of Sydney in the State of New South Wales, Clerk to Allen Allen & Hemsley of 53/63 Martin Place, Sydney, Solicitors, being duly sworn makes oath and says as follows:-

THAT the writing contained on this and the five preceding pages is a true copy of the original Conveyance and the Statutory Declaration annexed thereto the same having been compared therewith by me.

SWORN at Sydney this second day of ~~August~~ September year 1950 Before me - } A. P. Henchman

A.H. Drury

RECEIVED into the Office for the Registration of Deeds at Sydney this Fourth day of August One thousand nine hundred and fifty at forty two minutes past two o'clock in the afternoon of and from Allen Allen & Hemsley clerk to Allen Allen & Hemsley

Alston.

Deputy Registrar

Req:R640932 /Doc:BK 3450-490 NO /Rev:13-Feb-2015 /NSW LRS /Prt:17-Feb-2020 09:20 /Seq:1 of 6
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New South Wales
Stamp Duty
$1.00

$24 24 FEB 98

# DEED OF CONVEYANCE

No. 490 Book 3450

THIS DEED is made the 20th day of November One thousand nine hundred and eighty BETWEEN COURTAULDS (AUSTRALIA) LIMITED a Company duly incorporated in the State of New South Wales of 530 Little Collins Street Melbourne in the State of Victoria and formerly of 7 Wynyard Street Sydney in the State of New South Wales (hereinafter called "the Vendor") of the one part AND TOMAGO ALUMINIUM COMPANY PTY.LIMITED a Company duly incorporated in the State of New South Wales having a registered office at 3rd Floor, 4 O'Connell Street Sydney aforesaid (hereinafter called "the Purchaser") WHEREAS the Vendor is seised for an estate in fee simple in the land described in the First Schedule hereto AND WHEREAS the Vendor has agreed to sell and the Purchaser has agreed to purchase the land aforesaid NOW THIS DEED WITNESSETH that in consideration of the sum of Four million one hundred thousand dollars ($4,100,000.00) paid by the Purchaser to the Vendor (the receipt whereof is hereby acknowledged) the Vendor as beneficial owner DOTH HEREBY CONVEY unto the Purchaser in fee simple ALL the land described in the First Schedule hereto TOGETHER WITH all the mines veins seams and beds of coal and minerals of whatsoever nature lying in and under the land aforesaid AND the Vendor hereby covenants with the Purchaser that the Vendor and its successors and assigns will produce or cause to be produced the documents mentioned in the Second Schedule hereto upon request by the Purchaser or any person or persons having or claiming through him any estate or interest at law or in equity in the said land or any part thereof.

IN WITNESS WHEREOF the said parties have hereunto set their hands and seals the day and year first hereinbefore written.

## THE FIRST SCHEDULE

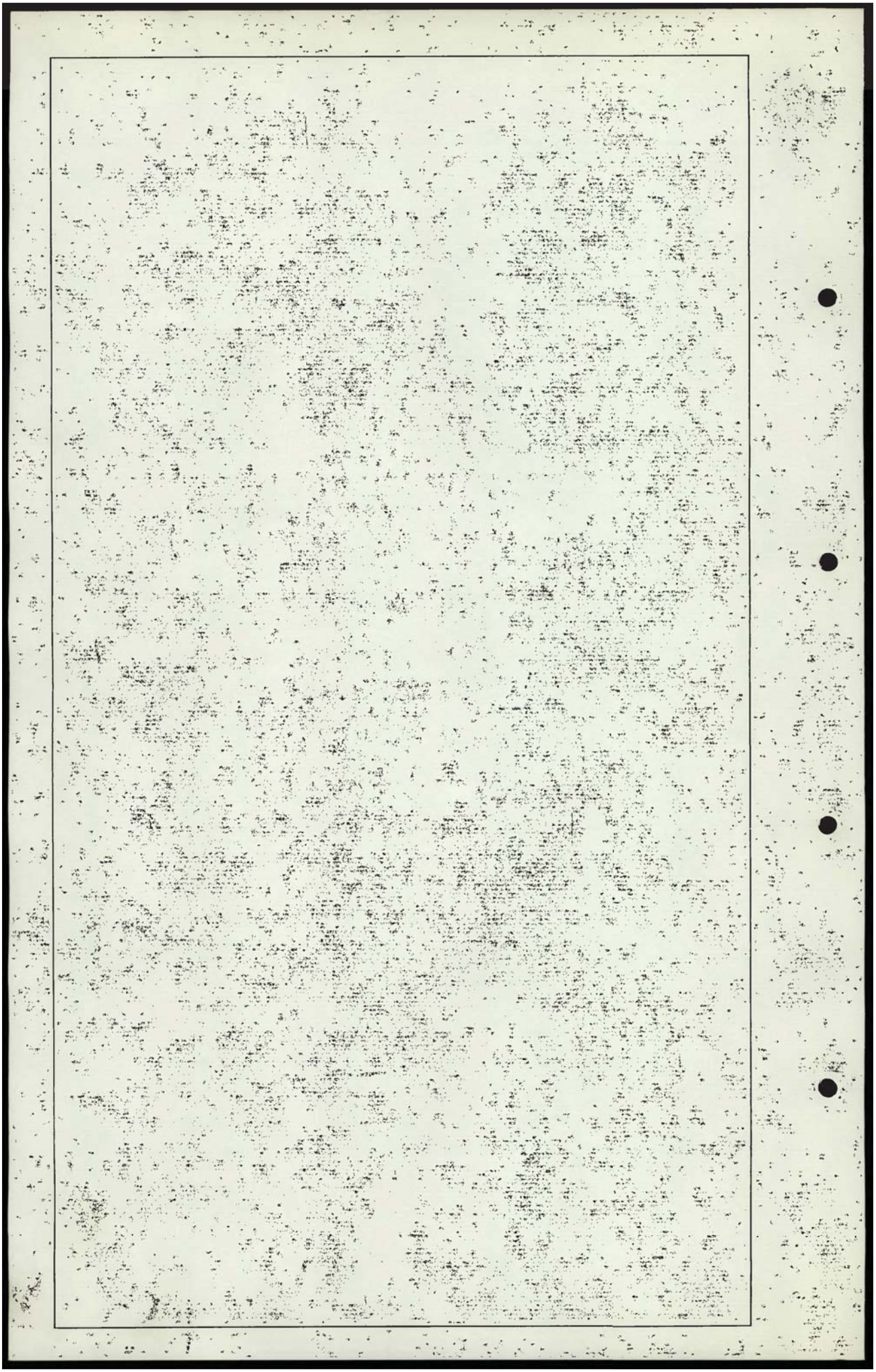
ALL THAT piece or parcel of land in the State of New South Wales County of Gloucester and Parish of Stockton being part of Portion 7 at Tomago and being the land Secondly described in Conveyance Registered Number 269 Book 2018 be the hereinafter mentioned several dimensions a little more or less COMMENCING at a point in the North Western

SHEET MUST NOT BE FOLDED OR CREASED

I 2.

C

Req:R640932 /Doc:BK 3450-490 NO /Rev:13-Feb-2015 /NSW LRS /Prt:17-Feb-2020 09:20 /Seq:2 of 6
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SHEET MUST NOT BE FOLDED OR CREASED



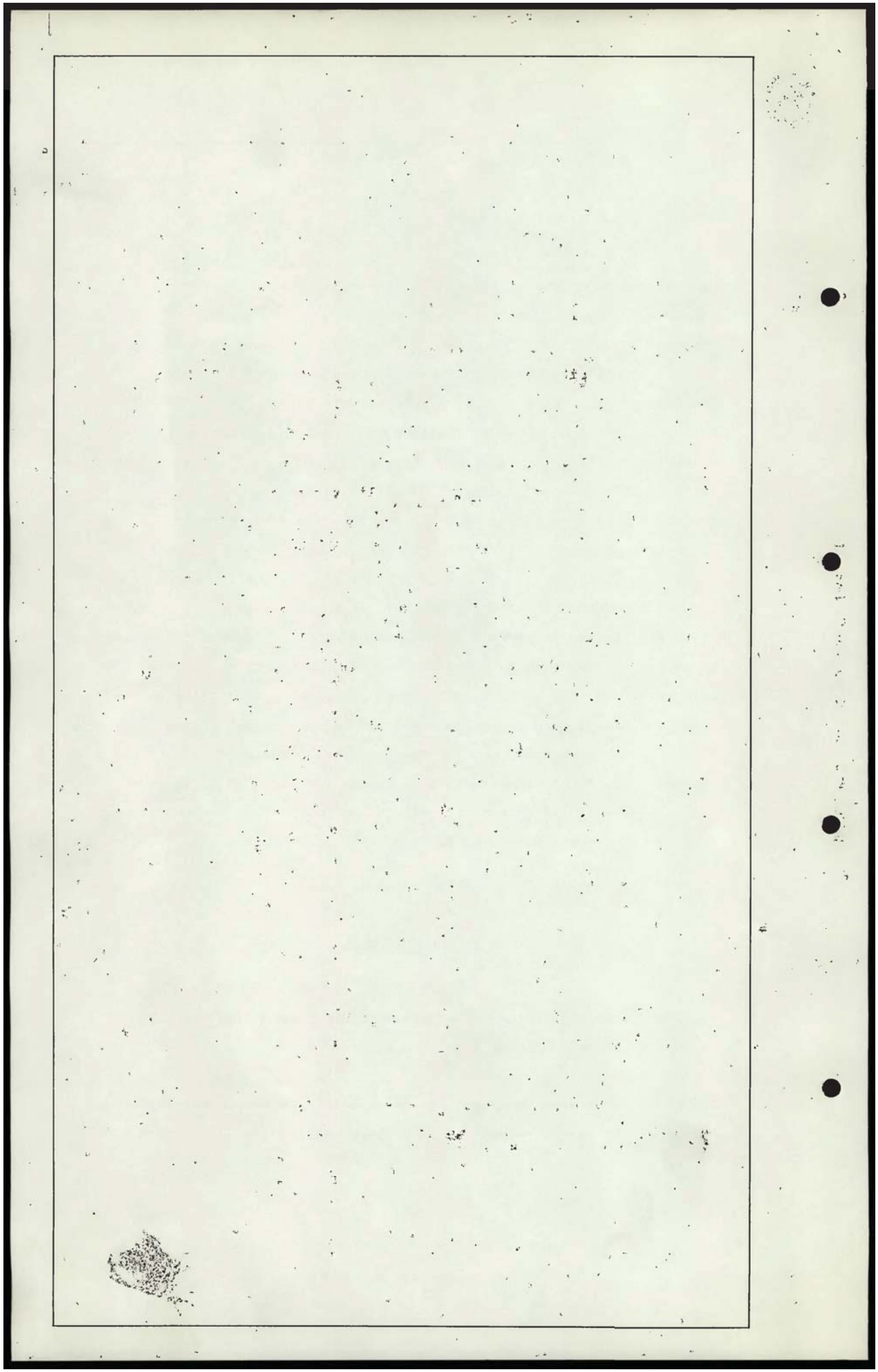
side of the road from Williamtown to Hexham at the South Eastern corner of a Public School site and bounded thence towards the South West and South East by the North Eastern and North Western boundaries of that school site bearing 336 degrees 21 minutes 348.4 links and 246 degrees 21 minutes 400 links respectively thence towards the South West and South by North Eastern and Northern boundaries of Lot 13 on Registered Plan (O.S.) No. 876 bearing 316 degrees 21 minutes 3630 links and 269 degrees 54 minutes 548.1 links respectively thence towards the West by part of the Eastern boundary of Portion 17 and an Eastern boundary of Portion 6 bearing 359 degrees 54 minutes 1400 links and 359 degrees 25 minutes 350 links respectively thence towards the North by part of a Southern boundary of Portion 6 aforesaid bearing 89 degrees 10 minutes 3170.5 links thence towards the North East by the South Western boundary of Lot 12 on Registered Plan (O.S.) No. 876 bearing 159 degrees 19½ minutes 3651 links to the road from Williamtown to Hexham aforesaid and thence towards the South East by North Western sides of that road bearing 233 degrees 59½ minutes 475.6 links 212 degrees 10½ minutes 232 links and 209 degrees 11½ minutes 787.8 links respectively to the point of commencement but excepting thereout Lots 1, 2, 3, 4, 5 and 6 in Deposited Plan 38904 (formerly known as Registered Plan 1904).

## THE SECOND SCHEDULE

1. Conveyance Registered Number 269 Book 2018 dated 17th May, 1947 between Jessie Mildred Ruward of the one part and John Thomas McKee of the other part.

~~2.--Power-of-Attorney-by-John-Thomas-McKee-in-favour-of-Harold-Hamilton Moore-Registered-Miscellaneous-Number-39211.~~

Req:R640932 /Doc:BK 3450-490 NO /Rev:13-Feb-2015 /NSW LRS /Prt:17-Feb-2020 09:20 /Seq:4 of 6
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2.

3. Conveyance Registered Number 415 Book 2131 dated 1st June 1950 between John Thomas McKee and Courtaulds (Australia) Limited.

THE COMMON SEAL of COURTAULDS (AUSTRALIA) LIMITED was hereunto affixed in the presence of two of the Directors who have hereunto signed their names in the presence of :

L.S.

(Sgd.) D.M. Charles
Director

(Sgd.) J.T. Fielder
Director

(Sgd.) B.E. Le Page
Secretary

On 20th February, 1981, I, Sandra Mallam of Sydney, Clerk to Clayton, Utz & Company of Level 23, Tower Building, Australia Square, Sydney, Solicitors, say on oath :- The writing contained above and on the two preceding pages has been compared by me with the original instrument, and is a true copy thereof.

Sworn at Sydney
before me:

S. Mallam

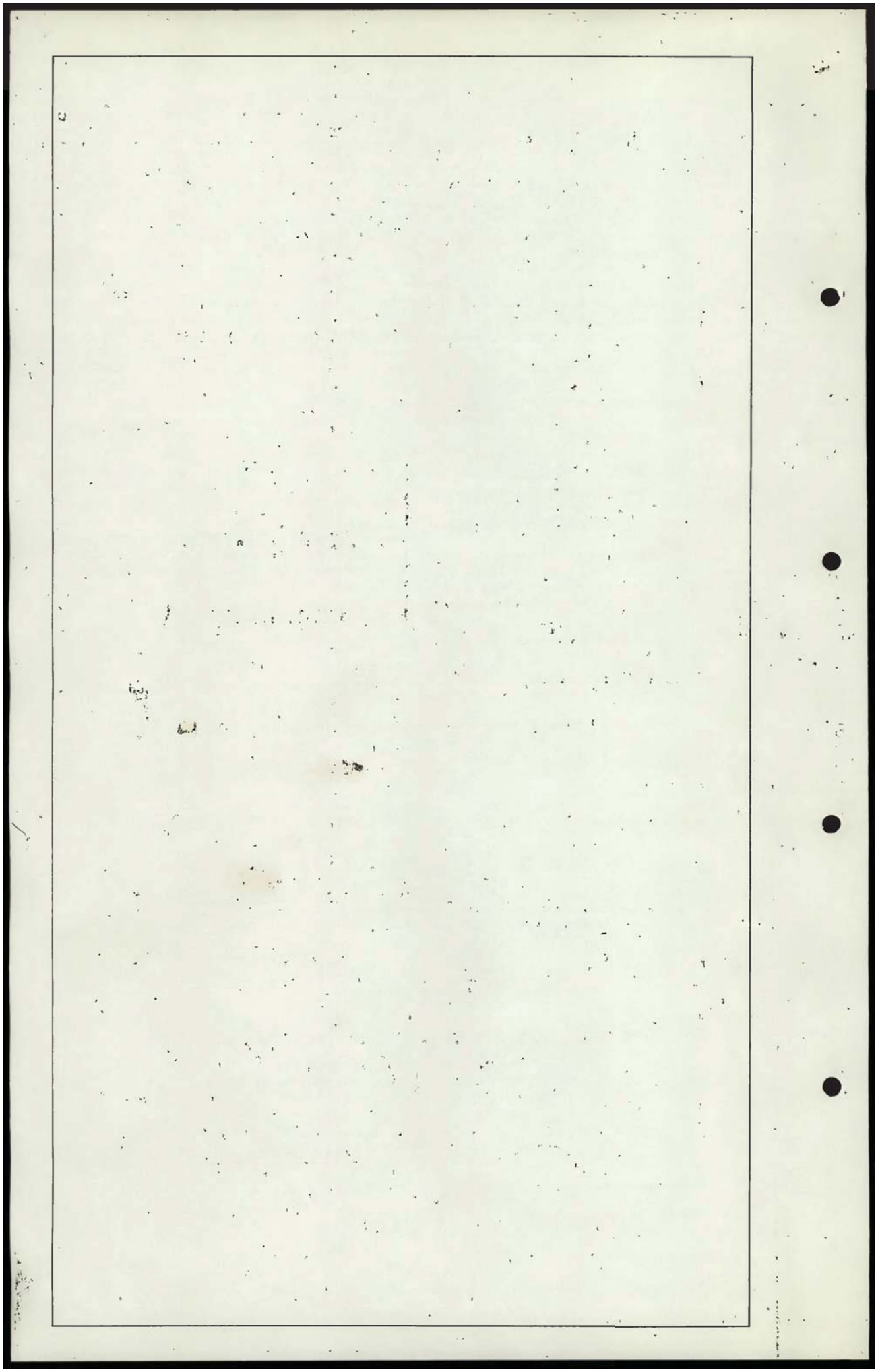
Sandra T. Harrison JP
A Justice of the Peace

Registered in the office of the Registrar General at Sydney, this 24th day of February 1981, at 25 minutes past 10 o'clock and lodged by GILLIAN SHAW Sydney, Clerk to Clayton, Utz & Company of Level 23, Tower Building, Australia Square, Sydney, Solicitors and numbered 490 book 3450.

Registrar General

SHEET MUST NOT BE FOLDED OR CREASED

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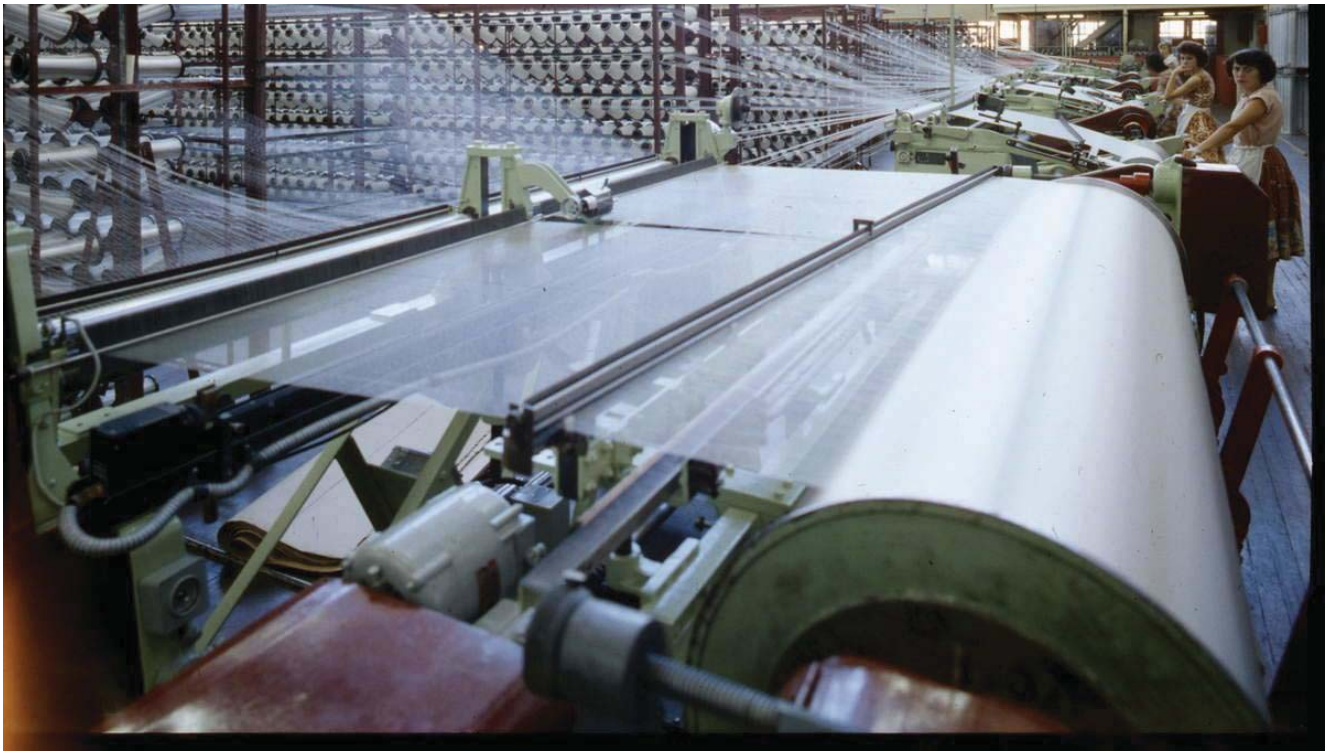

3 / 5 free articles remaining | F

February 26 2013 - 10:30PM

# GREG RAY: A view from Pommy Hill

- **GREG RAY**





Courtaulds

REMEMBER Pommy Hill?

I don't, but maybe if you grew up around Raymond Terrace the name might mean something to you.

Photographs on the *Herald* website last week of the former Courtaulds rayon factory at Tomago prompted comments from readers who remembered the factory in its heyday. (See the pictures here)

Reader Peter Cox phoned to tell me that many of the first workers at the factory were brought from the parent company in the UK and many of them lived at Pommy Hill.

"Pommy Hill was that area on the left, between the bridge and the school as you go into Raymond Terrace," Peter said.

He wants to hear from anybody who knows anything about the area, or about Courtaulds itself, because he is writing a history of the Pommy families, like his own, who once lived and worked there.

"I want to talk to as many as I can, and get their photos too, before it's too late to put it all together," he said.

3 / 5 free articles remaining | F

Peter's family came out from Wales in 1952, when he was 13. He recalls having been sent to school in England, in order to avoid acquiring a Welsh accent.

"Both my parents spoke fluent Welsh, but it was hardly ever used in our home because they didn't want us to grow up with the accent," he said.

Peter's father worked at Courtaulds as a construction supervisor and his expertise related to the process and machinery, especially the chemical plant that formed the heart of the operation.

"Two chemical plant streams were involved," Peter said. "One handled sulphuric acid and the other handled acetone."

The factory made rayon for vehicle tyres, until the advent of steel-belted radials crippled its core business.

"There were 127 families came out, and each had an average of two or three children, so you can imagine it had a big impact on Raymond Terrace at the time," Peter said.

And as for the town itself, Peter said it seemed to him the perfect place to live and grow up.

"We rode horses, worked on the local farm milking cows and cutting chaff, we rode motorbikes and played in the river on rafts and made flying foxes that dropped us into the water. It was a wonderful place," he said.

It wasn't easy for everybody, however. Peter's brother died in a motorbike accident at the age of 18, and his opera singer mother never really found her feet in her new surroundings.

Peter was aware of widespread rumours that Courtaulds was an occasional bad polluter of the Hunter River, but when he worked there on vacation as a water sampler he never saw any problems.

"There used to be a wharf down near the hostel - I think it's a detention centre now - and we'd take a boat from there, dragging tins behind us to get water samples. There were spills sometimes, and floods caused trouble, but they tried hard to do the right thing," he said.

He said he did some work for the French company Pechiney, which built the Tomago Aluminium smelter on the old Courtaulds site.

"They erased almost every trace of the old factory," he said. "I think they might have left the gatehouse."

Peter remembers Newcastle as a thriving city in the 1950s and 1960s.

"I didn't bother even trying to drive my car to town in those days because it was so hard to get a park. I parked out at Mayfield and got a bus to town.

"Now, when I go into Newcastle, I find it almost unbelievable that this is the same place. It's sad, I think, to see how it's gone downhill in so many ways.

"Compared to how it was when I used to work in the city it seems so decrepit. Some of the same buildings are still there, but you can hardly recognise them from what they were."

If you want to help Peter write his history of Courtaulds and the Pommy Hill families, you can phone him on 4965 5649.

## RECOMMENDED

3 / 5 free articles remaining | F

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4 / 5 free articles remaining | For Unlimited Access SUBSCRIBE

- TWEET
-
-
- Comments



Picture: Douglass Baglin



Picture: Douglass Baglin

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Picture: Douglass Baglin

**Several times a week Greg posts an image or gallery of images that relates to some aspect of the past, usually in the Hunter Region.**

**The Herald invites readers to post comments, observations and recollections of their own in response. Extra information about any of the images is especially welcome.**

**Please comment . . .**

RAYON-making used to be a important Hunter industry in the 1960s, with the Courtaulds factory at Tomago employing many people.

These photos, by Douglass Baglin, give some inkling of what it was like to work there.

The following excerpt comes from the excellent Fighter World website: http://www.fighterworld.com.au/about-port-stephens/post-war-development

"The Courtauld factory at Tomago began in the post war years to manufacture synthetic fibres especially for motor vehicle tyres. Negotiations between the State Government and Courtaulds regarding their proposed factory led to the construction of the Hexham Bridge in 1952 to replace the punts that crossed the Hunter River. Masonite also expanded after the war and both factories benefited with easier access to markets and fewer delays in the delivery of materials. Courtaulds built their factory off Tomago Road in the early 1950s and brought key factory workers from Britain to commence operations in 1953 and to train others. A hundred and fifty of these families migrated on the Australian Government Migrant Assistance Scheme. This industry (1950 to the late1970s) led to the southern expansion of Raymond Terrace for new housing for the workforce. Courtaulds employed 1500 to 2300 workers and made a tremendous impact on the small town as more people came to live nearer the sources of work.When steel reinforced radial tyres replaced corded tyres about 1970 Courtaulds closed their factory."

Reader recollections about the factory are welcome.


- SHARE
- TWEET
-
-
- Comments

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Licence: MID/0734/97

# TRANSFER

6882809V

New South Wales

~~Real Property Act 1900~~

OFFICE OF STATE REVENUE (N.S.W. TREASURY)

Office of State Revenue use only

CLIENT No. 2393

STAMP DUTY $2.00

TRANSACTION No. 002204

ASSESSMENT DETAILS:

STAMP No. 227

SIGNATURE E. Leasmell

DATE 26/5/00

(A) **LAND TRANSFERRED**

If appropriate, specify the share or part transferred.

FOLIO IDENTIFIER 71/634535, 302/634536, 303/634536 and 304/634536

(B) **LODGED BY**

| LTO Box | Name, Address or DX and Telephone |
|---|---|
| 205 | ANZ<br>Reference (15 character max): VARLEY PROPERTY\|SR6D |

(C) **TRANSFEROR** **ALLCO CONSTRUCTION PTY. LIMITED ACN 003 918 750**

(D) acknowledges receipt of the consideration of $3,800,000.00 and as regards the land specified above transfers to the transferee an estate in fee simple.

(E) Encumbrances (if applicable):

(F) **TRANSFEREE**

| | |
|---|---|
| **T**<br>**TS**<br>(s713 LGA)<br>**TW**<br>(Sheriff) | **VARLEY PROPERTY PTY. LIMITED ACN 090 568 728** |

(G)

(H) We certify this dealing correct for the purposes of the Real Property ~~Act 1900~~. **DATE** 30/05/2000

THE COMMON SEAL of **ALLCO CONSTRUCTION PTY. LIMITED** (ACN 003 918 750) was hereunto affixed in accordance with the memorandum and articles of association:

ALLCO CONSTRUCTION PTY. LIMITED ACN 003 918 750 The Common Seal of

M. S. V.

Secretary

Michael Vladimiroff

Director

David Cockburn

C. Hojer

Signature of GILDA ELLENE HOJER
Solicitor for the Transferee



Checked by (LTO use) .....

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Form: 01T
Licence: 01-08-067
Licensee: Midware Systems
Clayton Utz

(5)

# TRANSFER

**New South Wales**
**Real Property Act 1900**

9501060L

PRIVACY NOTE: this information is legally required and will bec...

**STAMP DUTY**

Office of State Revenue use only

NEW SOUTH WALES DUTY
12-03-2003 0001317902-001
SECTION 18(2)
DUTY $ ~~XXXXXXXXXXXX2.00~~

(A) **TORRENS TITLE**

If appropriate, specify the part transferred
Folio Identifier 5/270328, 6/270328, 7/270328, 8/270328 and 9/270328

(B) **LODGED BY**

| Delivery Box | Name, Address or DX and Telephone | CODE |
|---|---|---|
| 185H | CLAYTON UTZ<br>DX 370 SYDNEY Tel: 9353 4000<br>Ian Richardson<br>Reference (optional): ~~116/3394~~/21722914 (footer:3207126) | T<br>TW<br>(Sheriff) |

(C) **TRANSFEROR**

VARLEY PROPERTY PTY LIMITED (ABN 82 090 568 728)

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 1,919,000.00 and as regards

(E) **ESTATE** the land specified above transfers to the transferee an estate in fee simple.

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE**

TOMAGO ALUMINIUM COMPANY PTY LIMITED (ACN 001 862 228)

(I) ~~**TENANCY:**~~

(J) **DATE** 30 / MAY / 2003

Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the corporation named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.
Corporation: VARLEY PROPERTY PTY LTD
Authority: Section 127 of the Corporations Law

VARLEY PROPERTY PTY. LTD. A.C.N. 090 568 728 Common Seal

Signature of authorised person: J Graham

Name of authorised person: JAMES ALLAN JEFFREY GRAHAM
Office held: DIRECTOR

Signature of authorised person:

Name of authorised person: JEFFREY IAN PHILLIPS.
Office held: DIRECTOR

Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name: George Livanes
Signatory's capacity: Solicitor for the transferee

All handwriting must be in block capitals.



Number additional pages sequentially

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AG216557R

Form: 01TCV
Release: 3.0
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# TRANSFER INCLUDING COVENANT

New South Wales
Real Property Act 1900

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar-General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

**STAMP DUTY**

Office of State Revenue use only

(2)

Office of State Revenue
NSW Treasury
Client No: 2396 227
Duty: $10 — Trans No: 618274
Asat details: 5.18(3)

(A) **TORRENS TITLE** 5/270328 and 6/270328

(B) **LODGED BY**

| Document Collection Box | Name, Address or DX, Telephone, and Customer Account Number if any | CODE |
|---|---|---|
| 74S | ALLENS ARTHUR ROBINSON<br>DX 105 SYDNEY<br>TEL: (02) 9230 4000<br>Reference: VKHS:205943198:EYLS*7628 | TV |

123024 W

(C) **TRANSFEROR** TOMAGO ALUMINIUM COMPANY PTY LIMITED (ABN 68 001 862 228)

(D) The transferor acknowledges receipt of the consideration of $ ~~1.00~~ 1,447,600.00 and as regards the land specified above transfers to the transferee an estate in fee simple

(E) and the TRANSFEROR covenants with the TRANSFEREE as set out in schedule 1 hereto.

(F) Encumbrances (if applicable):

(G) **TRANSFEREE** MIDAL CABLES INTERNATIONAL PTY LIMITED (ABN 55 141 481 012)

(H) **TENANCY:** O/NW

**DATE** 23 March 2011

(I) Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the corporation named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Corporation: TOMAGO ALUMINIUM COMPANY PTY LIMITED
Authority: section 127 of the Corporations Act 2001

Signature of authorised person: J L Davies
Name of authorised person: John Davies
Office held: Director

Signature of authorised person:
Name of authorised person: Ray Gellweiler
Office held: Company Secretary

Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the corporation named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Corporation: MIDAL CABLES INTERNATIONAL PTY LIMITED
Authority: section 127 of the Corporations Act 2001

Signature of authorised person:
Name of authorised person: HAMID R ALZAYANI
Office held: DIRECTOR

Signature of authorised person:
Name of authorised person: SALMAN ALSHAIKH
Office held: DIRECTOR

(J) I, the transferee certify that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. [ ] Signature:

1003

ALL HANDWRITING MUST BE IN BLOCK CAPITALS.



LAND AND PROPERTY MANAGEMENT AUTHORITY

Blue NSS

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(K) **SCHEDULE 1 TO TRANSFER:**

(L) **Dated:** _____

**From:** TOMAGO ALUMINIUM COMPANY PTY LIMITED (ABN 68 001 862 228)

**To:** MIDAL CABLES INTERNATIONAL PTY LIMITED (ABN 55 141 481 012)

(M) **Land benefited by covenant:** 1/1043561 and 4/1043561

**Land burdened by covenant:** 5/270328 and 6/270328

(N) **Terms of the covenant:**

See Annexure

J L Davies
John Davies

Roy Gellweiler

(O) **Signature of witness:**

**Signature of transferor:**

**Signature of witness:**

HAMID R ALZAYANI
**Signature of transferee:**

SALMAN ALSHAIKH

ALL HANDWRITING MUST BE IN BLOCK CAPITALS.

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23/03/2011

**ANNEXURE TO THE TRANSFER DATED FROM TOMAGO ALUMINIUM COMPANY PTY LIMITED (*TRANSFEROR*) TO MIDAL CABLES INTERNATIONAL PTY LIMITED (*TRANSFEREE*)**

## Restrictive Covenant

**It is agreed** as follows

## 1. Definitions and Interpretation

### 1.1 Definitions

The following definitions apply unless the context requires otherwise.

***Authorised Officer*** means any person whose title or acting title includes the word manager or similar expression or any secretary or director.

***Benefited Land*** means the land owned by the Transferor, comprising Lot 1 and Lot 4 in DP1043561 on which the Transferor operates the Smelter.

***Benefited Owner*** means the Transferor, its successors and assigns, being the owner or occupier of, or any person with any interest in, the Benefited Land from time to time.

***Burdened Land*** means the Property.

***Burdened Owner*** means the Transferee, its successors and assigns, being the owner or occupier of, or any person with any interest in, the Burdened Land from time to time.

***Burdened Owner's DA*** means any development consent obtained by the Burdened Owner for the construction and operation of the Rod Mill.

***Business Day*** means a day other than Saturday, Sunday or a public holiday in Sydney.

***Competitive Activity*** means any manufacturing activity that is substantially similar to, identical or in direct competition with the manufacturing activities carried on by the Benefited Owner as on the date of this Covenant, including commercial production of primary aluminium unalloyed or alloyed ingots, unalloyed or alloyed T bars, extrusion billets and rolling slabs. For the avoidance of doubt, a manufacturing facility for aluminium rod, wire, sector, conductor and related parts shall not be a Competitive Activity.

J L Davies
JOHN DAVIES

***Environment Protection Authority*** means the NSW Environment Protection Authority and/or any other person or Authority having jurisdiction, rights, powers, duties or responsibilities over the Benefited Land or any part of it.

Roy Gellweiler

***Property*** means Lot 5 and Lot 6 in DP270328.

***Restrictive Covenant*** means each of the restrictions on the use of the Burdened Land as set out in paragraph 5.

***Rod Mill*** means the mill, to be built by the Burdened Owner on the Property in accordance with the Supply Agreement between the Benefited Owner and the Burdened Owner dated on or about the date of this Covenant, for producing aluminium rod.



HAMID R AL ~~ZAYANI~~

SALMAN ALSHAIKH

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***Rod Mill Development*** means the proposed development and commissioning of the Rod Mill.

***Smelter*** means the aluminium smelter operated by the Benefited Owner at Tomago Road, Tomago, near Newcastle in the State of New South Wales, and any further development or expansion of that aluminium smelter from time to time.

**1.2 Interpretation**

Headings are for convenience only and do not affect interpretation. The following rules of interpretation apply unless the context requires otherwise.

(a) The ***singular*** includes the plural and conversely.

(b) A ***gender*** includes all genders.

(c) Where a ***word*** or ***phrase*** is defined, its other grammatical forms have a corresponding meaning.

(d) ***clause***, ***paragraph*** or ***sub-clause*** means a clause, paragraph or sub-clause, respectively, of this Covenant.

(e) Unless stated otherwise, one provision does not limit the effect of another.

(f) Mentioning anything after ***includes*** or ***including*** does not limit what else may be included.

## 2. Acknowledgments

The Burdened Owner acknowledges and agrees with the Benefited Owner that:

(a) it is of fundamental importance to the Benefited Owner that the environmental envelope in which the Smelter operates will not be exceeded in any way by any activity on the Property now or at any time in the future;

(b) the Benefited Owner is selling the Property to the Burdened Owner on the basis that the Burdened Owner will use the Property only for the purpose of constructing and operating the Rod Mill or such other manufacturing operation as the Burdened Owner may undertake from time to time on the Property, provided that such manufacturing operation is not a Competitive Activity; and

(c) if there is a dispute between the Benefited Owner and the Burdened Owner as to whether the activity or business is a Competitive Activity, then that dispute will be determined by expert determination as prescribed in paragraph 10.

**2.2 Acknowledgments**

The Benefited Owner and the Burdened Owner acknowledge and agree that:

(a) the land to which the benefit of the Restrictive Covenant is appurtenant is the whole and each part of the Benefited Land;

(b) the land which is subject to the burden of the Restrictive Covenant is the whole and each part of the Burdened Land;

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(c) the owners in fee simple for the time being of the Benefited Land have the right to release the Restrictive Covenant;

(d) there are no persons other than the Burdened Owner and Benefited Owner whose consent is required to a release, variation or modification of the Restrictive Covenant; and

(e) any remedy available to the Benefited Owner for breach of the Restrictive Covenant will exclude consequential loss and loss of profits and is limited to direct damages only or injunctive or such other equitable relief.

## 3. Burdened Owner covenants

The Burdened Owner covenants that it:

(a) has the power to create the Restrictive Covenant on the Burdened Land imposed in this Covenant;

(b) will observe and comply with the terms of the Restrictive Covenant at all times; and

(c) will, when required by the Benefited Owner and at the cost of the Benefited Owner, do all things necessary to maintain the Restrictive Covenant on the Burdened Land as the Benefited Owner reasonably requires, including signing any further document or consent.

## 4. Damages not adequate remedy

The parties agree that damages are not an adequate remedy for breach of the Restrictive Covenant and the Burdened Owner consents to the Benefited Owner obtaining orders for injunctive relieve if there is a breach of the Restrictive Covenant.

## 5. Restrictive Covenant

The Burdened Owner must:

(a) not use or permit or suffer to be used the Burdened Land in a manner which:

(i) exceeds Environment Protection Authority licence limits set on the Rod Mill or such other manufacturing operations that may be undertaken by the Burdened Owner that is not a Competitive Activity for all relevant atmospheric emissions as may be regulated by the Environmental Protection Authority from time to time; or

(ii) exceeds Environment Protection Authority licence limits set on the Rod Mill for noise emanating from the Burdened Land; or

(iii) is outside the parameters of the Burdened Owner's DA.

(b) not lodge or permit or suffer any application for any development consent in respect of the Burdened Land to be lodged with the relevant consent authority without the prior approval in writing of the Benefited Owner having been first obtained, such approval not to be unreasonably withheld if the proposed

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development would not (in the Benefited Owner's reasonable opinion) if implemented, cause or be likely to cause a breach of the covenants set out in paragraph (a);

(c) not lease, licence, sell or permit or suffer to be sold the Burdened Land to any person unless:

(i) on or prior to completion of any sale or the grant of any lease or licence of the Burdened Land, the purchaser, lessee or licensee enters into a deed with the Benefited Owner in a form and containing such terms and conditions as are reasonably satisfactory to the Benefited Owner in which that person covenants with the Benefited Owner on the same terms as are set out in this Restrictive Covenant; and

(ii) that person proposes to use the Property for the sole purpose of operating the Rod Mill or such other manufacturing operation that is not a Competitive Activity; and

(d) not use the Property for any purpose other than the construction and operation of the Rod Mill and such other manufacturing operation as the Burdened Owner may undertake from time to time on the Property, provided that such manufacturing operation is not a Competitive Activity. If there is a dispute between the Benefited Owner and the Burdened Owner as to whether the activity or business is or is not a Competitive Activity, then that dispute will be determined by expert determination as prescribed in paragraph 10.

## 6. Notices

Any notice given under this Covenant:

(a) must be in writing addressed to the intended recipient at the address shown below or the address last notified by the intended recipient to the sender:

| | |
|---|---|
| **Benefited Owner** | Tomago Aluminium Company Pty Limited<br>Tomago Road, Tomago, NSW 2324 |
| Attention: | Secretary |
| Fax: | (02) 4966-9840 |

| | |
|---|---|
| **Burdened Owner** | Midal Cables International Pty Limited<br>PO Box 5939, MANAMA, KINGDOM OF BAHRAIN |
| Attention: | Chief Executive or General Manager |
| Fax: | +973 17 832 932 / 33 |

(b) must be signed by the sender or an Authorised Officer of the sender,

(c) will be taken to have been given:

(i) (in the case of delivery in person) when delivered, received or left at the above address;

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(ii) (in the case of facsimile transmission) when recorded on the transmission result report unless:

(A) within 24 hours of that time the recipient informs the sender that the transmission was received in an incomplete or garbled form; or

(B) the transmission result report indicates a faulty or incomplete transmission; or

(iii) (in the case of post) on the second day after the date on which the notice is accepted for posting by the relevant postal authority.

If delivery or receipt is on a day which is not a Business Day in the place of receipt or is later than 4pm (local time) on a Business Day in the place of receipt, the notice will be taken to have been given on the next Business Day in the place of receipt.

## 7. Governing Law

This Covenant is governed by the laws of New South Wales. The parties submit to the non-exclusive jurisdiction of courts exercising jurisdiction there.

## 8. Stamp Duty and Costs

Each party must pay its own costs arising out of the preparation of this Covenant but the Burdened Owner must pay any stamp duty and registration fees (including fines and penalties) chargeable on this Covenant, on any instruments entered into under this Covenant, and in respect of the transaction evidenced by this Covenant. The Burdened Owner must indemnify the Benefited Owner on demand against any liability for that stamp duty (including fines and penalties).

## 9. Variations and Waivers to be in Writing

No variation, modification or waiver of any provision in this Covenant, nor consent to any departure by a party from any such provision, shall be of any effect unless it is in writing, signed by the parties or (in the case of a waiver) by the party giving it. Any such variation, modification, waiver or consent shall be effective only to the extent to or for which it may be made or given.

## 10. Dispute resolution

### 10.1 General Disputes

(a) This paragraph 10 applies if a provision in this Covenant requires that a matter in dispute between the parties be referred to an independent expert for determination.

(b) A party may serve a Determination Notice (**"Determination Notice"**) on the other party:

Req:R641602 /Doc:DL AG216557 /Rev:13-May-2011 /NSW LRS /Pgs:ALL /Prt:17-Feb-2020 10:10 /Seq:8 of 9
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(i) advising the other party that the dispute is to be referred to an independent expert for determination; and

(ii) requesting the other party to agree to the appointment of a suitably qualified independent expert, as nominated in the Determination Notice, for the purposes of determining the dispute.

(c) If the parties cannot agree on an independent expert within 5 Business Days after a party serves a Determination Notice on the other party, a party may ask the chairperson of LEADR (or the vice chairperson if the chairperson declines) to:

(i) appoint an appropriate expert having regard to the nature of the dispute who will be the independent expert for the purposes of this Covenant in respect of the dispute which is the subject of the relevant Determination Notice; and

(ii) notify the parties of the identity and of contact details of the independent expert; and

(iii) determine the remuneration of the independent expert.

(d) The parties must instruct the independent expert to:

(i) act as an expert and not as an arbitrator;

(ii) subject to any express provision in this Covenant to the contrary, determine the rules for the conduct of the independent expert's determination; and

(iii) subject to any express provision in this Covenant to the contrary, consider the documents and other information the parties give the independent expert and which, in the opinion of the independent expert, are relevant.

(e) The independent expert:

(i) is not bound to observe the rules of natural justice or the rules of evidence;

(ii) subject to any express provision in this Covenant to the contrary, may obtain and refer to documents and information not provided by the parties; and

(iii) subject to any express provision in this Covenant to the contrary, must give a written decision including reasons; and

(iv) subject to any express provision in this Covenant to the contrary, must endeavour to give that decision as soon as practicable.

(f) Unless there is a material error, the independent expert's decision is final and binding on the parties.

(g) Subject to any express provision in this Covenant to the contrary, the parties to the dispute must:

(i) equally share the costs of the independent expert's determination of their dispute (unless the independent expert decides otherwise); and

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(ii) pay their own costs in connection with the dispute.

(h) Before referring any matter in dispute to an independent expert for determination under this paragraph 10 the parties will act in a bona fide manner with a view to resolving the dispute.

HAMID R AL ZAYANI

SALMAN AL SHAIKH

J L Davies
John Davies

Ray Gellweiler

Req:R641216 /Doc:DL AN271076 /Rev:27-Apr-2018 /NSW LRS /Pgs:ALL /Prt:17-Feb-2020 09:45 /Seq:1 of 1
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Form: 01T
Release: 6·2

(1)

# TRANSFER

New South Wales
Real Property Act 1900

AN271076W

**PRIVACY NOTE:** Section 31B of the Real Property Act 1900 (RP Act) authorises the R... ...eneral to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

**STAMP DUTY** Revenue NSW use only

Office of State Revenue (NSW)
Client No: 88891 5709
Duty: $10 Trans No: 9332162-001
Asst details:

This Document is bounded with Apostille No BHM110125 Dated 02/04/2018
396794

(A) **TORRENS TITLE** Folio Identifier 11/270328

(B) **LODGED BY**

| Document Collection Box | Name, Address or DX, Telephone, and Customer Account Number if any | CODES |
|---|---|---|
| 35D | MORRIS, HAYES & EDGAR<br>DX 420 SYDNEY PH: 9232-2411<br>AS AGENTS FOR<br>LLPN: 123005 B<br>Reference: ~~HVLS: 120644862~~ 45765273 9 WAS | T<br>TW |

(C) **TRANSFEROR** Midal Cables International Pty Limited (ABN 55 141 481 012)

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 4,000,000.00 and as regards

(E) **ESTATE** the abovementioned land transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** Tomago Aluminium Company Pty Limited (ABN 68 001 862 228)

(I) **TENANCY:**

DATE 9 APRIL 2018

(J) Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the company named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Company: Midal Cables International Pty Limited (ABN 55 141 481 012)
Authority: section 127 of the Corporations Act 2001

Signature of authorised person:
Name of authorised person: Mohamed Mustafa Rafea
Office held: Director

Signature of authorised person:
Name of authorised person: Rashid Hamid Al Zayani
Office held: Director

I, Kellie Mitchell am authorised to make this alteration. K Mitchell dated: 5 April, 2018

Certified correct for the purposes of the Real Property Act 1900 on behalf of the transferee by the person whose signature appears below.

Signature:

Signatory's name: Andrew Mansour
Signatory's capacity: solicitor

(K) The transferee certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. [ ] Full name: _____ Signature: _____

** s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.*

ALL HANDWRITING MUST BE IN BLOCK CAPITALS



1708

Req:R640721 /Doc:DL Z102540 /Rev:03-Aug-2010 /NSW LRS /Pgs:ALL /Prt:17-Feb-2020 09:01 /Seq:1 of 1
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OFFICE USE ONLY

Z 102540

OFFICE OF STATE REVENUE (N.S.W. TREASURY) 1989/91 S10 DULY STAMPED

# TRANSFER

REAL PROPERTY ACT, 1900

T

3 | 6 of 6 | X

$ 44

R5/5

| Torrens Title Reference | If Part Only, Delete Whole and Give Details | Location |
|---|---|---|
| Folio Identifier<br>71/634535<br>302/634536<br>303/634536<br>304/634536 | WHOLE | at Tomago |

DESCRIPTION OF LAND Note (a)

TRANSFEROR Note (b)

ALLCO STEEL CORPORATION PTY LIMITED

S10 DUTY NOTATION NOTED

D

ESTATE Note (c)

(the abovenamed TRANSFEROR) hereby acknowledges receipt of the consideration of ~~$4,469,280.00~~ 4,519,280.00 and transfers an estate in fee simple in the land above described to the TRANSFEREE

TRANSFEREE Note (d)

ALLCO STEEL CONSTRUCTIONS PTY LIMITED

OFFICE USE ONLY S

TENANCY Note (e)

as joint tenants/tenants in common

PRIOR ENCUMBRANCES Note (f)

subject to the following PRIOR ENCUMBRANCES 1. (R 432112 Surplus 34 o/f)

2. R 802827 3.

DATE 18TH JUNE 1990.

We hereby certify this dealing to be correct for the purposes of the Real Property Act, 1900.

EXECUTION Note (g)

Signed in my presence by the transferor who is personally known to me

THE COMMON SEAL of ALLCO STEEL CORPORATION PTY LIMITED was hereunto affixed by resolution of the Directors in the presence of:

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address and occupation of Witness

Secretary

ALLCO STEEL CORPORATION PTY. LTD. Common Seal

Director

Signature of Transferor

Note (g)

Signed in my presence by the transferee who is personally known to me

THE COMMON SEAL of ALLCO STEEL CONSTRUCTIONS PTY LIMITED was hereunto affixed by resolution of the Boards of Directors by in the presence of

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address and occupation of Witness

Director

ALLCO STEEL CONSTRUCTIONS PTY. LTD. Common Seal

Director

Signature of Transferee

TO BE COMPLETED BY LODGING PARTY Notes (h) and (i)

LODGED BY P. M. KINSEY SOLICITOR 19 PEMBROKE PLACE BELROSE 2085

Delivery Box Number 19

LOCATION OF DOCUMENTS

| CT | OTHER | |
|---|---|---|
| | | Herewith. |
| | | In L.T.O. with |
| | | Produced by |

OFFICE USE ONLY

| Checked | Passed | REGISTERED - -19 |
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| Signed | Extra Fee | 8 AUG 1990 |

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| Secondary Directions | OFF | L | R432112 (302/634536) |
| Delivery Directions | CT | 4Q | P. M. KINSEY 19 PEMBROKE PL. BELROSE |

Req:R640749 /Doc:CT 15149-204 CT /Rev:19-Jan-2011 /NSW LRS /Pgs:ALL /Prt:17-Feb-2020 09:03 /Seq:1 of 2
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# CERTIFICATE OF TITLE

15149204

NEW SOUTH WALES — REAL PROPERTY ACT, 1900

Vol. 15149 Fol. 204

First Title Old System

Prior Title IVA 39908

EDITION ISSUED 17 11 1983

I certify that the person named in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set out below) in the land described subject to the reservations and conditions in the Second Schedule and to the provisions of the Real Property Act, 1900.

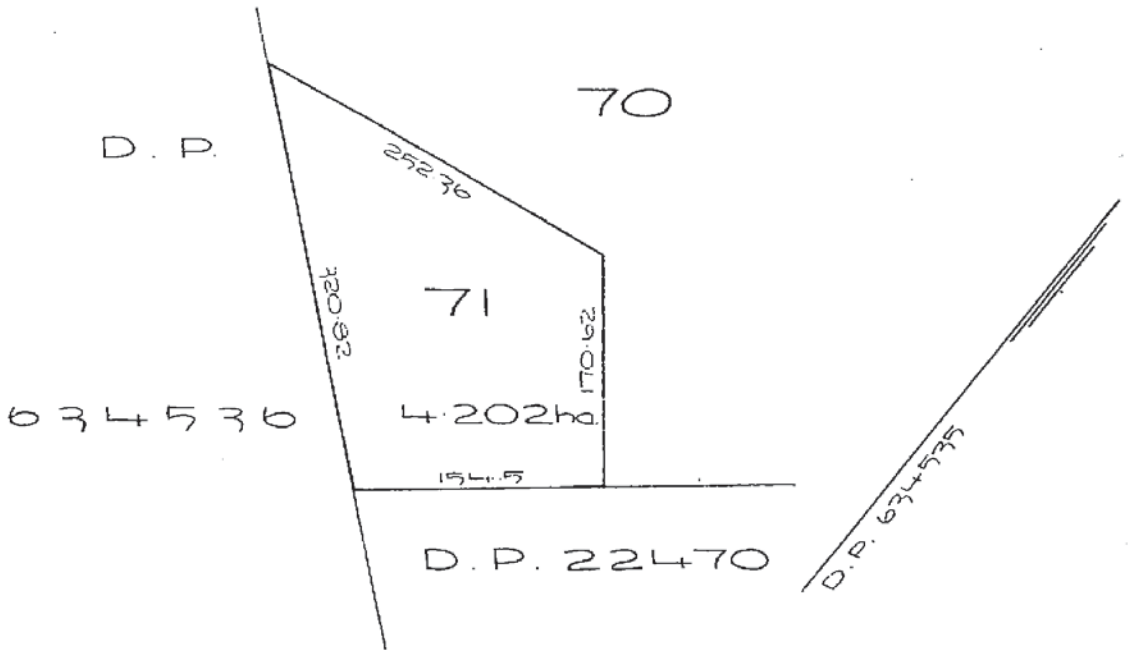
CANCELLED

Registrar General.

SEE AUTO FOLIO

## PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES




IVA 39908

## LAND REFERRED TO

Lot 71 in Deposited Plan 634535 in the Shire of Port Stephens Parish of Stockton County of Gloucester.

## FIRST SCHEDULE

~~TOMAGO ALUMINIUM COMPANY PTY. LIMITED.~~ –

## SECOND SCHEDULE

GR4 1. Reservations and conditions in the Crown Grant.
CG 2. CAUTION. The land within described is held subject to any subsisting interest (as defined in Section 28A Real Property Act, 1900). 17·11·1983
RU 3. DP634535 Restriction as to user.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON (Page 1) Vol. 15149 Fol. 204

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Vol. 15149 Fol. 204

L.O. 1066 D. West, Government Printer

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR | Registrar General

Allco Steel Corporation Pty. Limited by Transfer V956698. Registered 22-10-1985

CANCELLED

SEE AUTO FOLIO

SECOND SCHEDULE (continued)

PARTICULARS | Registrar General | CANCELLATION

U(RU) DP634535 P Restriction as to user. V956701 Variation. Registered 22-10-1985

M V956699 P Mortgage to The Minister for Decentralisation. Registered 22-10-1985

M V956700 P Mortgage to Port Stephens Shire Council. Registered 22-10-1985

~~W20791 Mortgage to Westpac Banking Corporation. Registered 22-11-1985~~

M W185218 P Mortgage to Citicorp Australia Limited. Registered 28-4-1986

U(M) W185218 P Mortgage X6410 Transfer of Mortgage to State Bank of New South Wales. Registered 5-8-1987

X6409

NOTATIONS AND UNREGISTERED DEALINGS

V956698 1 699 M 7000 M 1 1 1 W20791 M R W185218 M R X 6409 DM R 10 TM

NOTE: ENTRIES RULED THROUGH AND AUTHEN

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Req:R640749 /Doc:CT 15149-204 CT

# Appendix F

## Laboratory Documentation

source: [Untitled].pdf page: 1 SGS Ref: SE204895_COC



# CHAIN OF CUSTODY & ANALYSIS REQUEST

**SGS Environmental Services Sydney**
**Unit 16, 33 Maddox Street**
**Alexandria NSW 2015**
**Facsimile No: (02) 85940499**
**Telephone No: (02) 85940400**
**Email:**
**au.samplereceipt.sydney@sgs.com**

**Sample Date:** 6-7/04/2020

| | | | |
|---|---|---|---|
| Company Name: | JM Environments | Project Name/No: | JME2020 |
| Address: | 37 Tooke St | Purchase Order No: | JME2020 |
| | COOKS HILL NSW 2300 | Results Required By: | Standard |
| Contact Name: | James McMahon | Email: | james@jmenvironments.com |
| Telephone | 0427 893 668 | Email: | johnh@jmjenvironments.com |

| | | | |
|---|---|---|---|
| Relinquished by: J McMahon | Date /Time: 4pm 8/4/2020 | Received by: TNT | Date /Time: 4pm 8/4/2020 |
| Relinquished by: | Date /Time: | Received by: | Date /Time: 8/4/20 10:50 |
| Samples intact: Yes/No | Temperature: 16°C | Sample Cooler Sealed: Yes/No | Laboratory Quotation: ENVI126319 |

| Lab Sample ID | Sample ID | Water | Soil | Other | Preservative | No. of Containers | | pH/CEC | CL10 | CL15 | CL18 | CL2 | BTEX | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BH1 0.2-0.3 | | x | | | | | | | | | | | | | | | | sampled 6/4/2020 |
| 1 | BH1 1-1.1 | | x | | | | | x | x | | | | | | | | | | sampled 6/4/2020 |
| | BH1 1.4-1.5 | | x | | | | | | | | | | | | | | | | sampled 6/4/2020 |
| | BH1 1.9-2 | | x | | | | | | | | | | | | | | | | sampled 6/4/2020 |
| 2 | BH1 2.4-2.5 | | x | | | | | | | | X | X | | | | | | | sampled 6/4/2020 |
| | BH2 0.2-0.3 | | x | | | | | | | | | | | | | | | | sampled 6/4/2020 |
| 3 | BH2 1-1.45 | | x | | | | | | | | X | X | | | | | | | sampled 6/4/2020 |
| 4 | BH2 2-2.45 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| 5 | TP1 0 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| 6 | TP1 1.6 | | x | | | | | | | | x | x | | | | | | | sampled 6/4/2020 |
| 7 | TP2 0 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| 8 | TP2 0.7 | | x | | | | | | | X | | | | | | | | | sampled 6/4/2020 |
| 9 | TP3 0 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| 10 | TP3 0.55 | | x | | | | | | | X | | | | | | | | | sampled 6/4/2020 |
| 11 | TP4 0 | | x | | | | | | X | | | | | | | | | | sampled 6/4/2020 |
| 12 | TP4 0.7 | | x | | | | | | | | X | X | | | | | | | sampled 6/4/2020 |
| 13 | TP5 0 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| 14 | TP5 0.5 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| | TP6 0 | | x | | | | | | | | | | | | | | | | sampled 6/4/2020 |
| 15 | TP6 1 | | x | | | | | | | | X | X | | | | | | | sampled 6/4/2020 |

SGS EHS Alexandria Laboratory



SE204895 COC
Received: 08 – Apr – 2020

# CHAIN OF CUSTODY & ANALYSIS REQUEST

**Sample Date:** 6-7/04/2020

**SGS Environmental Services Sydney**
**Unit 16, 33 Maddox Street**
**Alexandria NSW 2015**
**Facsimile No: (02) 85940499**
**Telephone No: (02) 85940400**
**Email:**
**au.samplereceipt.sydney@sgs.com**

| | | | |
|---|---|---|---|
| Company Name: | JM Environments | Project Name/No: | JME2020 |
| Address: | 37 Tooke St | Purchase Order No: | JME2020 |
| | COOKS HILL NSW 2300 | Results Required By: | Standard |
| Contact Name: | James McMahon | Email: | james@jmenvironments.com |
| Telephone | 0427 893 668 | Email: | johnh@jmjenvironments.com |

| | | | |
|---|---|---|---|
| Relinquished by: J McMahon | Date /Time: 4pm 8/4/2020 | Received by: TNT | Date /Time: 4pm 8/4/2020 |
| Relinquished by: | Date /Time: | Received by: | Date /Time: 8/4/20 @ 10.50 |
| Samples intact: Yes/No | Temperature: 16°C | Sample Cooler Sealed: / Yes/No | Laboratory Quotation: ENVI126319 |

| Lab Sample ID | Sample ID | Water | Soil | Other | Preservative | No. of Containers | | pH/CEC | CL10 | CL15 | CL18 | CL2 | BTEX | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | TP7 0 | | x | | | | | | | X | | | | | | | | | sampled 6/4/2020 |
| 17 | TP7 0.6 | | x | | | | | | | X | | | | | | | | | sampled 6/4/2020 |
| 18 | TP8 0 | | x | | | | | x | x | | | | | | | | | | sampled 6/4/2020 |
| 19 | TP8 0.7 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| | TP9 0 | | x | | | | | | | | | | | | | | | | sampled 6/4/2020 |
| 20 | TP9 0.3 | | x | | | | | | | X | | | | | | | | | sampled 6/4/2020 |
| 21 | TP9 0.5 | | x | | | | | | | | x | x | | | | | | | sampled 6/4/2020 |
| 22 | TP10 0 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| 23 | TP10 0.6 | | x | | | | | | | X | | | | | | | | | sampled 6/4/2020 |
| 24 | TP11 0 | | x | | | | | x | x | | | | | | | | | | sampled 6/4/2020 |
| 25 | TP10 0.3 | | x | | | | | | | X | | | | | | | | | sampled 6/4/2020 |
| 26 | TP11 0.2 | | x | | | | | | | X | | | | | | | | | sampled 6/4/2020 |
| 27 | TP11 0.5 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| 28 | TP12 0 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| 29 | TP12 0.5 | | x | | | | | | | | x | x | | | | | | | sampled 6/4/2020 |
| 30 | TP12 0.7 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| 31 | TP13 0 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| 32 | TP13 0.3 | | x | | | | | | | | x | x | | | | | | | sampled 6/4/2020 |
| 33 | TP13 0.5 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| | TP14 0 | | x | | | | | | | | | | | | | | | | sampled 6/4/2020 |

SGS

# CHAIN OF CUSTODY & ANALYSIS REQUEST

**Sample Date:** 6-7/04/2020

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**Unit 16, 33 Maddox Street**
**Alexandria NSW 2015**
**Facsimile No: (02) 85940499**
**Telephone No: (02) 85940400**
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| | | | |
|---|---|---|---|
| Company Name: | JM Environments | Project Name/No: | JME2020 |
| Address: | 37 Tooke St | Purchase Order No: | JME2020 |
| | COOKS HILL NSW 2300 | Results Required By: | Standard |
| Contact Name: | James McMahon | Email: | james@jmenvironments.com |
| Telephone | 0427 893 668 | Email: | johnh@jmjenvironments.com |

| | | | |
|---|---|---|---|
| Relinquished by: J McMahon | Date /Time: 4pm 8/4/2020 | Received by: TNT | Date /Time: 4pm 8/4/2020 |
| Relinquished by: | Date /Time: | Received by: | Date /Time: 8/4/20 @ 10.50 |
| Samples intact: Yes/No | Temperature: 16°C | Sample Cooler Sealed: Yes/No | Laboratory Quotation: ENVI126319 |

| Lab Sample ID | Sample ID | Water | Soil | Other | Preservative | No. of Containers | | pH/CEC | CL10 | CL15 | CL18 | CL2 | BTEX | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 34 | TP14 0.3 | | x | | | | | x | | X | | | | | | | | | sampled 6/4/2020 |
| 35 | TP14 0.5 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| 36 | TP15 0 | | x | | | | | | | | x | x | | | | | | | sampled 6/4/2020 |
| 37 | TP15 0.5 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| | TP16 0 | | x | | | | | | | | | | | | | | | | sampled 6/4/2020 |
| 38 | TP16 0.5 | | x | | | | | | | | X | X | | | | | | | sampled 6/4/2020 |
| 39 | TP17 0 | | x | | | | | x | | | | | | | | | | | sampled 6/4/2020 |
| 40 | TP17 0.3 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| 41 | TP18 0 | | x | | | | | | | X | | | | | | | | | sampled 6/4/2020 |
| 42 | TP19 0 | | x | | | | | x | x | | | | | | | | | | sampled 7/4/2020 |
| 43 | TP19 0.4 | | x | | | | | | | | X | X | | | | | | | sampled 7/4/2020 |
| 44 | TP20 0 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| 45 | TP20 0.4 | | x | | | | | | | X | | | | | | | | | sampled 6/4/2020 |
| 46 | TP21 0 | | x | | | | | | x | | | | | | | | | | sampled 7/4/2020 |
| 47 | TP21 1 | | x | | | | | | | X | | | | | | | | | sampled 7/4/2020 |
| 48 | TP22 0 | | x | | | | | x | x | | | | | | | | | | sampled 7/4/2020 |
| 49 | TP22 1 | | x | | | | | x | | X | | | | | | | | | sampled 7/4/2020 |
| 50 | TP23 0 | | x | | | | | | x | | | | | | | | | | sampled 7/4/2020 |
| 51 | TP23 0.4 | | x | | | | | | | | X | X | | | | | | | sampled 7/4/2020 |
| 52 | TP23 0.5 | | x | | | | | | x | | | | | | | | | | sampled 7/4/2020 |

# CHAIN OF CUSTODY & ANALYSIS REQUEST

**Sample Date:** 6-7/04/2020

**SGS Environmental Services Sydney**
**Unit 16, 33 Maddox Street**
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**Facsimile No: (02) 85940499**
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| | | | |
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| Relinquished by: | Date /Time: | Received by: | Date /Time: 8/4/2020 10.50 |
| Samples intact: Yes/No | Temperature: 16°C | Sample Cooler Sealed: Yes/No | Laboratory Quotation: ENVI126319 |

| Lab Sample ID | Sample ID | Water | Soil | Other | Preservative | No. of Containers | | pH/CEC | CL10 | CL15 | CL18 | CL2 | BTEX | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 53 | QC1 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| | QC1A | | x | | | | | | x | | | | | | | | | | Send to ALS sampled 6/4/2020 |
| 54 | QC2 | | x | | | | | | x | | | | | | | | | | sampled 6/4/2020 |
| | QC2A | | x | | | | | | x | | | | | | | | | | Send to ALS sampled 6/4/2020 |
| | QC3 | | x | | | | | | | | | | | | | | | | Hold sampled 6/4/2020 |
| | QC3A | | x | | | | | | | | | | | | | | | | Hold sampled 6/4/2020 |
| 55 | Trip Blank | | x | | | | | | | | | | x | | | | | | |
| 56 | Trip Spike | | x | | | | | | | | | | x | | | | | | |
| 57 | QCA | x | | | | | | | | | | x | | | | | | | |

# SAMPLE RECEIPT ADVICE

SE204895

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME2020** |
| Order Number | **JME2020** |
| Samples | 57 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| Samples Received | Wed 8/4/2020 |
| Report Due | Fri 17/4/2020 |
| SGS Reference | **SE204895** |

## SUBMISSION DETAILS

This is to confirm that 57 samples were received on Wednesday 8/4/2020. Results are expected to be ready by COB Friday 17/4/2020. Please quote SGS reference SE204895 when making enquiries. Refer below for details relating to sample integrity upon receipt.

| | | | |
|---|---|---|---|
| Samples clearly labelled | Yes | Complete documentation received | Yes |
| Sample container provider | SGS | Sample cooling method | Ice |
| Samples received in correct containers | Yes | Sample counts by matrix | 56 Soil, 1 Water |
| Date documentation received | 8/4/2020 | Type of documentation received | COC |
| Samples received in good order | Yes | Samples received without headspace | Yes |
| Sample temperature upon receipt | 16°C | Sufficient sample for analysis | Yes |
| Turnaround time requested | Standard | | |

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

## COMMENTS

10 soil samples have been placed on hold as no tests have been assigned for them by the client. These samples will not be processed.

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# SAMPLE RECEIPT ADVICE

SE204895

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME2020

SUMMARY OF ANALYSIS

| No. | Sample ID | OC Pesticides in Soil | OP Pesticides in Soil | PAH (Polynuclear Aromatic Hydrocarbons) in Soil | PCBs in Soil | Speciated Phenols in Soil | TRH (Total Recoverable Hydrocarbons) in Soil | VOC's in Soil | Volatile Petroleum Hydrocarbons in Soil |
|---|---|---|---|---|---|---|---|---|---|
| 001 | BH1 1-1.1 | - | - | 26 | - | - | 10 | 11 | 7 |
| 002 | BH1 2-4.2.5 | - | - | 26 | - | - | 10 | 81 | 7 |
| 003 | BH2 1-1.45 | - | - | 26 | - | - | 10 | 81 | 7 |
| 004 | BH2 2-2.45 | - | - | 26 | - | - | 10 | 11 | 7 |
| 005 | TP1 0 | - | - | 26 | - | - | 10 | 11 | 7 |
| 006 | TP1 1.6 | - | - | 26 | - | - | 10 | 81 | 7 |
| 007 | TP2 0 | - | - | 26 | - | - | 10 | 11 | 7 |
| 008 | TP2 0.7 | 29 | 14 | 26 | 11 | 18 | 10 | 11 | 7 |
| 009 | TP3 0 | - | - | 26 | - | - | 10 | 11 | 7 |
| 010 | TP3 0.55 | 29 | 14 | 26 | 11 | 18 | 10 | 11 | 7 |
| 011 | TP4 0 | - | - | 26 | - | - | 10 | 11 | 7 |
| 012 | TP4 0.7 | - | - | 26 | - | - | 10 | 81 | 7 |
| 013 | TP5 0 | - | - | 26 | - | - | 10 | 11 | 7 |
| 014 | TP5 0.5 | - | - | 26 | - | - | 10 | 11 | 7 |
| 015 | TP6 1 | - | - | 26 | - | - | 10 | 81 | 7 |
| 016 | TP7 0 | 29 | 14 | 26 | 11 | 18 | 10 | 11 | 7 |
| 017 | TP7 0.6 | 29 | 14 | 26 | 11 | 18 | 10 | 11 | 7 |
| 018 | TP8 0 | - | - | 26 | - | - | 10 | 11 | 7 |
| 019 | TP8 0.7 | - | - | 26 | - | - | 10 | 11 | 7 |
| 020 | TP9 0.3 | 29 | 14 | 26 | 11 | 18 | 10 | 11 | 7 |
| 021 | TP9 0.5 | - | - | 26 | - | - | 10 | 81 | 7 |
| 022 | TP10 0 | - | - | 26 | - | - | 10 | 11 | 7 |
| 023 | TP10 0.6 | 29 | 14 | 26 | 11 | 18 | 10 | 11 | 7 |
| 024 | TP11 0 | - | - | 26 | - | - | 10 | 11 | 7 |

CONTINUED OVERLEAF

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Testing as per this table shall commence immediately unless the client intervenes with a correction .

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME2020

SUMMARY OF ANALYSIS

| No. | Sample ID | OC Pesticides in Soil | OP Pesticides in Soil | PAH (Polynuclear Aromatic Hydrocarbons) in Soil | PCBs in Soil | Speciated Phenols in Soil | TRH (Total Recoverable Hydrocarbons) in Soil | VOC's in Soil | Volatile Petroleum Hydrocarbons in Soil |
|---|---|---|---|---|---|---|---|---|---|
| 025 | TP10 0.3 | 29 | 14 | 26 | 11 | 18 | 10 | 11 | 7 |
| 026 | TP11 0.2 | 29 | 14 | 26 | 11 | 18 | 10 | 11 | 7 |
| 027 | TP11 0.5 | - | - | 26 | - | - | 10 | 11 | 7 |
| 028 | TP12 0 | - | - | 26 | - | - | 10 | 11 | 7 |
| 029 | TP12 0.5 | - | - | 26 | - | - | 10 | 81 | 7 |
| 030 | TP12 0.7 | - | - | 26 | - | - | 10 | 11 | 7 |
| 031 | TP13 0 | - | - | 26 | - | - | 10 | 11 | 7 |
| 032 | TP13 0.3 | - | - | 26 | - | - | 10 | 81 | 7 |
| 033 | TP13 0.5 | - | - | 26 | - | - | 10 | 11 | 7 |
| 034 | TP14 0.3 | 29 | 14 | 26 | 11 | 18 | 10 | 11 | 7 |
| 035 | TP14 0.5 | - | - | 26 | - | - | 10 | 11 | 7 |
| 036 | TP15 0 | - | - | 26 | - | - | 10 | 81 | 7 |
| 037 | TP15 0.5 | - | - | 26 | - | - | 10 | 11 | 7 |
| 038 | TP16 0.5 | - | - | 26 | - | - | 10 | 81 | 7 |
| 040 | TP17 0.3 | - | - | 26 | - | - | 10 | 11 | 7 |
| 041 | TP18 0 | 29 | 14 | 26 | 11 | 18 | 10 | 11 | 7 |
| 042 | TP19 0 | - | - | 26 | - | - | 10 | 11 | 7 |
| 043 | TP19 0.4 | - | - | 26 | - | - | 10 | 81 | 7 |
| 044 | TP20 0 | - | - | 26 | - | - | 10 | 11 | 7 |
| 045 | TP20 0.4 | 29 | 14 | 26 | 11 | 18 | 10 | 11 | 7 |
| 046 | TP21 0 | - | - | 26 | - | - | 10 | 11 | 7 |
| 047 | TP21 1 | 29 | 14 | 26 | 11 | 18 | 10 | 11 | 7 |
| 048 | TP22 0 | - | - | 26 | - | - | 10 | 11 | 7 |

CONTINUED OVERLEAF

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# SAMPLE RECEIPT ADVICE

SE204895

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME2020

SUMMARY OF ANALYSIS

| No. | Sample ID | OC Pesticides in Soil | OP Pesticides in Soil | PAH (Polynuclear Aromatic Hydrocarbons) in Soil | PCBs in Soil | Speciated Phenols in Soil | TRH (Total Recoverable Hydrocarbons) in Soil | VOC's in Soil | Volatile Petroleum Hydrocarbons in Soil |
|---|---|---|---|---|---|---|---|---|---|
| 049 | TP22 1 | 29 | 14 | 26 | 11 | 18 | 10 | 11 | 7 |
| 050 | TP23 0 | - | - | 26 | - | - | 10 | 11 | 7 |
| 051 | TP23 0.4 | - | - | 26 | - | - | 10 | 81 | 7 |
| 052 | TP23 0.5 | - | - | 26 | - | - | 10 | 11 | 7 |
| 053 | QC1 | - | - | 26 | - | - | 10 | 11 | 7 |
| 054 | QC2 | - | - | 26 | - | - | 10 | 11 | 7 |
| 055 | Trip Blank | - | - | - | - | - | - | 11 | - |
| 056 | Trip Spike | - | - | - | - | - | - | 11 | - |

CONTINUED OVERLEAF

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# SAMPLE RECEIPT ADVICE

SE204895

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME2020

SUMMARY OF ANALYSIS

| No. | Sample ID | Exchangeable Cations and Cation Exchange Capacity | Mercury in Soil | Moisture Content | pH in soil (1:5) | Total Recoverable Elements in Soil/Waste |
|---|---|---|---|---|---|---|
| 001 | BH1 1-1.1 | 13 | 1 | 1 | 1 | 7 |
| 002 | BH1 2-4.2.5 | - | 1 | 1 | - | 7 |
| 003 | BH2 1-1.45 | - | 1 | 1 | - | 7 |
| 004 | BH2 2-2.45 | - | 1 | 1 | - | 7 |
| 005 | TP1 0 | - | 1 | 1 | - | 7 |
| 006 | TP1 1.6 | - | 1 | 1 | - | 7 |
| 007 | TP2 0 | - | 1 | 1 | - | 7 |
| 008 | TP2 0.7 | - | 1 | 1 | - | 7 |
| 009 | TP3 0 | - | 1 | 1 | - | 7 |
| 010 | TP3 0.55 | - | 1 | 1 | - | 7 |
| 011 | TP4 0 | - | 1 | 1 | - | 7 |
| 012 | TP4 0.7 | - | 1 | 1 | - | 7 |
| 013 | TP5 0 | - | 1 | 1 | - | 7 |
| 014 | TP5 0.5 | - | 1 | 1 | - | 7 |
| 015 | TP6 1 | - | 1 | 1 | - | 7 |
| 016 | TP7 0 | - | 1 | 1 | - | 7 |
| 017 | TP7 0.6 | - | 1 | 1 | - | 7 |
| 018 | TP8 0 | 13 | 1 | 1 | 1 | 7 |
| 019 | TP8 0.7 | - | 1 | 1 | - | 7 |
| 020 | TP9 0.3 | - | 1 | 1 | - | 7 |
| 021 | TP9 0.5 | - | - | 1 | - | - |
| 022 | TP10 0 | - | 1 | 1 | - | 7 |
| 023 | TP10 0.6 | - | 1 | 1 | - | 7 |
| 024 | TP11 0 | 13 | 1 | 1 | 1 | 7 |

CONTINUED OVERLEAF

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# SAMPLE RECEIPT ADVICE

SE204895

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME2020

SUMMARY OF ANALYSIS

| No. | Sample ID | Exchangeable Cations and Cation Exchange Capacity | Mercury in Soil | Moisture Content | pH in soil (1:5) | Total Recoverable Elements in Soil/Waste |
|---|---|---|---|---|---|---|
| 025 | TP10 0.3 | - | 1 | 1 | - | 7 |
| 026 | TP11 0.2 | - | 1 | 1 | - | 7 |
| 027 | TP11 0.5 | - | 1 | 1 | - | 7 |
| 028 | TP12 0 | - | 1 | 1 | - | 7 |
| 029 | TP12 0.5 | - | 1 | 1 | - | 7 |
| 030 | TP12 0.7 | - | 1 | 1 | - | 7 |
| 031 | TP13 0 | - | 1 | 1 | - | 7 |
| 032 | TP13 0.3 | - | 1 | 1 | - | 7 |
| 033 | TP13 0.5 | - | 1 | 1 | - | 7 |
| 034 | TP14 0.3 | 13 | 1 | 1 | 1 | 7 |
| 035 | TP14 0.5 | - | 1 | 1 | - | 7 |
| 036 | TP15 0 | - | 1 | 1 | - | 7 |
| 037 | TP15 0.5 | - | 1 | 1 | - | 7 |
| 038 | TP16 0.5 | - | 1 | 1 | - | 7 |
| 039 | TP17 0 | 13 | - | 1 | 1 | - |
| 040 | TP17 0.3 | - | 1 | 1 | - | 7 |
| 041 | TP18 0 | - | 1 | 1 | - | 7 |
| 042 | TP19 0 | 13 | 1 | 1 | 1 | 7 |
| 043 | TP19 0.4 | - | 1 | 1 | - | 7 |
| 044 | TP20 0 | - | 1 | 1 | - | 7 |
| 045 | TP20 0.4 | - | 1 | 1 | - | 7 |
| 046 | TP21 0 | - | 1 | 1 | - | 7 |
| 047 | TP21 1 | - | 1 | 1 | - | 7 |
| 048 | TP22 0 | 13 | 1 | 1 | 1 | 7 |

CONTINUED OVERLEAF

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# SAMPLE RECEIPT ADVICE

SE204895

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME2020

SUMMARY OF ANALYSIS

| No. | Sample ID | Exchangeable Cations and Cation Exchange Capacity | Mercury in Soil | Moisture Content | pH in soil (1:5) | Total Recoverable Elements in Soil/Waste |
|---|---|---|---|---|---|---|
| 049 | TP22 1 | 13 | 1 | 1 | 1 | 7 |
| 050 | TP23 0 | - | 1 | 1 | - | 7 |
| 051 | TP23 0.4 | - | 1 | 1 | - | 7 |
| 052 | TP23 0.5 | - | 1 | 1 | - | 7 |
| 053 | QC1 | - | 1 | 1 | - | 7 |
| 054 | QC2 | - | 1 | 1 | - | 7 |
| 055 | Trip Blank | - | - | 1 | - | - |

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
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# SAMPLE RECEIPT ADVICE

SE204895

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME2020

SUMMARY OF ANALYSIS

| No. | Sample ID | Mercury (dissolved) in Water | Trace Metals (Dissolved) in Water by ICPMS |
|---|---|---|---|
| 057 | QCA | 1 | 7 |

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# ANALYTICAL REPORT

Accreditation No. 2562

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME2020** |
| Order Number | **JME2020** |
| Samples | 57 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE204895 R1** |
| Date Received | 8/4/2020 |
| Date Reported | 21/4/2020 |

## COMMENTS

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

This report cancels and supersedes the report No.SE204895 R0 dated 17/04/20 issued by SGS Environment, Health and Safety due to the inclusion of previously missed 8 HM results for #21.

## SIGNATORIES

**Akheeqar BENIAMEEN**
Chemist

**Bennet LO**
Senior Organic Chemist/Metals Chemist

**Huong CRAWFORD**
Production Manager

**Kamrul AHSAN**
Senior Chemist

**Ly Kim HA**
Organic Section Head

**Shane MCDERMOTT**
Inorganic/Metals Chemist

## VOC's in Soil [AN433] Tested: 15/4/2020

| PARAMETER | UOM | LOR | BH1 1-1.1 SOIL - 6/4/2020 SE204895.001 | BH1 2-4.2.5 SOIL - 6/4/2020 SE204895.002 | BH2 1-1.45 SOIL - 6/4/2020 SE204895.003 | BH2 2-2.45 SOIL - 6/4/2020 SE204895.004 | TP1 0 SOIL - 6/4/2020 SE204895.005 |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | mg/kg | 1 | - | <1 | <1 | - | - |
| Chloromethane | mg/kg | 1 | - | <1 | <1 | - | - |
| Vinyl chloride (Chloroethene) | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Bromomethane | mg/kg | 1 | - | <1 | <1 | - | - |
| Chloroethane | mg/kg | 1 | - | <1 | <1 | - | - |
| Trichlorofluoromethane | mg/kg | 1 | - | <1 | <1 | - | - |
| Acetone (2-propanone) | mg/kg | 10 | - | <10 | <10 | - | - |
| Iodomethane | mg/kg | 5 | - | <5 | <5 | - | - |
| 1,1-dichloroethene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Acrylonitrile | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Dichloromethane (Methylene chloride) | mg/kg | 0.5 | - | <0.5 | <0.5 | - | - |
| Allyl chloride | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Carbon disulfide | mg/kg | 0.5 | - | <0.5 | <0.5 | - | - |
| trans-1,2-dichloroethene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,1-dichloroethane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Vinyl acetate | mg/kg | 10 | - | <10 | <10 | - | - |
| MEK (2-butanone) | mg/kg | 10 | - | <10 | <10 | - | - |
| cis-1,2-dichloroethene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Bromochloromethane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Chloroform | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 2,2-dichloropropane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,2-dichloroethane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,1,1-trichloroethane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,1-dichloropropene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Carbon tetrachloride | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibromomethane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,2-dichloropropane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 2-nitropropane | mg/kg | 10 | - | <10 | <10 | - | - |
| Bromodichloromethane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| MIBK (4-methyl-2-pentanone) | mg/kg | 1 | - | <1 | <1 | - | - |
| cis-1,3-dichloropropene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| trans-1,3-dichloropropene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,1,2-trichloroethane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1,3-dichloropropane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Chlorodibromomethane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 2-hexanone (MBK) | mg/kg | 5 | - | <5 | <5 | - | - |
| 1,2-dibromoethane (EDB) | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Tetrachloroethene (Perchloroethylene,PCE) | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,1,1,2-tetrachloroethane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Chlorobenzene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Bromoform | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| cis-1,4-dichloro-2-butene | mg/kg | 1 | - | <1 | <1 | - | - |
| Styrene (Vinyl benzene) | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,1,2,2-tetrachloroethane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 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 |
| 1,2,3-trichloropropane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| trans-1,4-dichloro-2-butene | mg/kg | 1 | - | <1 | <1 | - | - |
| Isopropylbenzene (Cumene) | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Bromobenzene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | BH1 1-1.1<br>SOIL<br>-<br>6/4/2020<br>SE204895.001 | BH1 2-4.2.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.002 | BH2 1-1.45<br>SOIL<br>-<br>6/4/2020<br>SE204895.003 | BH2 2-2.45<br>SOIL<br>-<br>6/4/2020<br>SE204895.004 | TP1 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.005 |
|---|---|---|---|---|---|---|---|
| n-propylbenzene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 2-chlorotoluene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 4-chlorotoluene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,3,5-trimethylbenzene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| tert-butylbenzene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,2,4-trimethylbenzene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| sec-butylbenzene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,3-dichlorobenzene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,4-dichlorobenzene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| p-isopropyltoluene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,2-dichlorobenzene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| n-butylbenzene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,2-dibromo-3-chloropropane | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,2,4-trichlorobenzene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| 1,2,3-trichlorobenzene | mg/kg | 0.1 | - | <0.1 | <0.1 | - | - |
| Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | <0.6 | <0.6 | <0.6 |
| Total VOC* | mg/kg | 24 | - | <24 | <24 | - | - |
| Total Other Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | <1.8 | <1.8 | - | - |
| Total Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | <1.8 | <1.8 | - | - |
| Total MAH VIC EPA (BTEX+Styrene)* | mg/kg | 0.4 | - | <0.4 | <0.4 | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP1 1.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.006 | TP2 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.007 | TP2 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.008 | TP3 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.009 | TP3 0.55<br>SOIL<br>-<br>6/4/2020<br>SE204895.010 |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | mg/kg | 1 | <1 | - | - | - | - |
| Chloromethane | mg/kg | 1 | <1 | - | - | - | - |
| Vinyl chloride (Chloroethene) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Bromomethane | mg/kg | 1 | <1 | - | - | - | - |
| Chloroethane | mg/kg | 1 | <1 | - | - | - | - |
| Trichlorofluoromethane | mg/kg | 1 | <1 | - | - | - | - |
| Acetone (2-propanone) | mg/kg | 10 | <10 | - | - | - | - |
| Iodomethane | mg/kg | 5 | <5 | - | - | - | - |
| 1,1-dichloroethene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Acrylonitrile | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Dichloromethane (Methylene chloride) | mg/kg | 0.5 | <0.5 | - | - | - | - |
| Allyl chloride | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Carbon disulfide | mg/kg | 0.5 | <0.5 | - | - | - | - |
| trans-1,2-dichloroethene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,1-dichloroethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Vinyl acetate | mg/kg | 10 | <10 | - | - | - | - |
| MEK (2-butanone) | mg/kg | 10 | <10 | - | - | - | - |
| cis-1,2-dichloroethene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Bromochloromethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Chloroform | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 2,2-dichloropropane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,2-dichloroethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,1,1-trichloroethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,1-dichloropropene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Carbon tetrachloride | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibromomethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,2-dichloropropane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 2-nitropropane | mg/kg | 10 | <10 | - | - | - | - |
| Bromodichloromethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| MIBK (4-methyl-2-pentanone) | mg/kg | 1 | <1 | - | - | - | - |
| cis-1,3-dichloropropene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| trans-1,3-dichloropropene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,1,2-trichloroethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1,3-dichloropropane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Chlorodibromomethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 2-hexanone (MBK) | mg/kg | 5 | <5 | - | - | - | - |
| 1,2-dibromoethane (EDB) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Tetrachloroethene (Perchloroethylene,PCE) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,1,1,2-tetrachloroethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Chlorobenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Bromoform | mg/kg | 0.1 | <0.1 | - | - | - | - |
| m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| cis-1,4-dichloro-2-butene | mg/kg | 1 | <1 | - | - | - | - |
| Styrene (Vinyl benzene) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,1,2,2-tetrachloroethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 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 |
| 1,2,3-trichloropropane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| trans-1,4-dichloro-2-butene | mg/kg | 1 | <1 | - | - | - | - |
| Isopropylbenzene (Cumene) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Bromobenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP1 1.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.006 | TP2 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.007 | TP2 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.008 | TP3 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.009 | TP3 0.55<br>SOIL<br>-<br>6/4/2020<br>SE204895.010 |
|---|---|---|---|---|---|---|---|
| n-propylbenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 2-chlorotoluene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 4-chlorotoluene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,3,5-trimethylbenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| tert-butylbenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,2,4-trimethylbenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| sec-butylbenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,3-dichlorobenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,4-dichlorobenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| p-isopropyltoluene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,2-dichlorobenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| n-butylbenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,2-dibromo-3-chloropropane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,2,4-trichlorobenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,2,3-trichlorobenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | <0.6 | <0.6 | <0.6 |
| Total VOC* | mg/kg | 24 | <24 | - | - | - | - |
| Total Other Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | <1.8 | - | - | - | - |
| Total Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | <1.8 | - | - | - | - |
| Total MAH VIC EPA (BTEX+Styrene)* | mg/kg | 0.4 | <0.4 | - | - | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP4 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.011 | TP4 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.012 | TP5 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.013 | TP5 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.014 | TP6 1<br>SOIL<br>-<br>6/4/2020<br>SE204895.015 |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | mg/kg | 1 | - | <1 | - | - | <1 |
| Chloromethane | mg/kg | 1 | - | <1 | - | - | <1 |
| Vinyl chloride (Chloroethene) | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Bromomethane | mg/kg | 1 | - | <1 | - | - | <1 |
| Chloroethane | mg/kg | 1 | - | <1 | - | - | <1 |
| Trichlorofluoromethane | mg/kg | 1 | - | <1 | - | - | <1 |
| Acetone (2-propanone) | mg/kg | 10 | - | <10 | - | - | <10 |
| Iodomethane | mg/kg | 5 | - | <5 | - | - | <5 |
| 1,1-dichloroethene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Acrylonitrile | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Dichloromethane (Methylene chloride) | mg/kg | 0.5 | - | <0.5 | - | - | <0.5 |
| Allyl chloride | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Carbon disulfide | mg/kg | 0.5 | - | <0.5 | - | - | <0.5 |
| trans-1,2-dichloroethene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,1-dichloroethane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Vinyl acetate | mg/kg | 10 | - | <10 | - | - | <10 |
| MEK (2-butanone) | mg/kg | 10 | - | <10 | - | - | <10 |
| cis-1,2-dichloroethene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Bromochloromethane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Chloroform | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 2,2-dichloropropane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,2-dichloroethane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,1,1-trichloroethane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,1-dichloropropene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Carbon tetrachloride | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibromomethane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,2-dichloropropane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 2-nitropropane | mg/kg | 10 | - | <10 | - | - | <10 |
| Bromodichloromethane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| MIBK (4-methyl-2-pentanone) | mg/kg | 1 | - | <1 | - | - | <1 |
| cis-1,3-dichloropropene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| trans-1,3-dichloropropene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,1,2-trichloroethane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1,3-dichloropropane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Chlorodibromomethane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 2-hexanone (MBK) | mg/kg | 5 | - | <5 | - | - | <5 |
| 1,2-dibromoethane (EDB) | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Tetrachloroethene (Perchloroethylene,PCE) | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,1,1,2-tetrachloroethane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Chlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Bromoform | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| cis-1,4-dichloro-2-butene | mg/kg | 1 | - | <1 | - | - | <1 |
| Styrene (Vinyl benzene) | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,1,2,2-tetrachloroethane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 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 |
| 1,2,3-trichloropropane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| trans-1,4-dichloro-2-butene | mg/kg | 1 | - | <1 | - | - | <1 |
| Isopropylbenzene (Cumene) | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Bromobenzene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP4 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.011 | TP4 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.012 | TP5 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.013 | TP5 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.014 | TP6 1<br>SOIL<br>-<br>6/4/2020<br>SE204895.015 |
|---|---|---|---|---|---|---|---|
| n-propylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 2-chlorotoluene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 4-chlorotoluene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,3,5-trimethylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| tert-butylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,2,4-trimethylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| sec-butylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,3-dichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,4-dichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| p-isopropyltoluene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,2-dichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| n-butylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,2-dibromo-3-chloropropane | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,2,4-trichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| 1,2,3-trichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | <0.1 |
| Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | <0.6 | <0.6 | <0.6 |
| Total VOC* | mg/kg | 24 | - | <24 | - | - | <24 |
| Total Other Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | <1.8 | - | - | <1.8 |
| Total Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | <1.8 | - | - | <1.8 |
| Total MAH VIC EPA (BTEX+Styrene)* | mg/kg | 0.4 | - | <0.4 | - | - | <0.4 |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP7 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.016 | TP7 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.017 | TP8 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.018 | TP8 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.019 | TP9 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.020 |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | mg/kg | 1 | - | - | - | - | - |
| Chloromethane | mg/kg | 1 | - | - | - | - | - |
| Vinyl chloride (Chloroethene) | mg/kg | 0.1 | - | - | - | - | - |
| Bromomethane | mg/kg | 1 | - | - | - | - | - |
| Chloroethane | mg/kg | 1 | - | - | - | - | - |
| Trichlorofluoromethane | mg/kg | 1 | - | - | - | - | - |
| Acetone (2-propanone) | mg/kg | 10 | - | - | - | - | - |
| Iodomethane | mg/kg | 5 | - | - | - | - | - |
| 1,1-dichloroethene | mg/kg | 0.1 | - | - | - | - | - |
| Acrylonitrile | mg/kg | 0.1 | - | - | - | - | - |
| Dichloromethane (Methylene chloride) | mg/kg | 0.5 | - | - | - | - | - |
| Allyl chloride | mg/kg | 0.1 | - | - | - | - | - |
| Carbon disulfide | mg/kg | 0.5 | - | - | - | - | - |
| trans-1,2-dichloroethene | mg/kg | 0.1 | - | - | - | - | - |
| MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | - | - | - | - | - |
| 1,1-dichloroethane | mg/kg | 0.1 | - | - | - | - | - |
| Vinyl acetate | mg/kg | 10 | - | - | - | - | - |
| MEK (2-butanone) | mg/kg | 10 | - | - | - | - | - |
| cis-1,2-dichloroethene | mg/kg | 0.1 | - | - | - | - | - |
| Bromochloromethane | mg/kg | 0.1 | - | - | - | - | - |
| Chloroform | mg/kg | 0.1 | - | - | - | - | - |
| 2,2-dichloropropane | mg/kg | 0.1 | - | - | - | - | - |
| 1,2-dichloroethane | mg/kg | 0.1 | - | - | - | - | - |
| 1,1,1-trichloroethane | mg/kg | 0.1 | - | - | - | - | - |
| 1,1-dichloropropene | mg/kg | 0.1 | - | - | - | - | - |
| Carbon tetrachloride | mg/kg | 0.1 | - | - | - | - | - |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibromomethane | mg/kg | 0.1 | - | - | - | - | - |
| 1,2-dichloropropane | mg/kg | 0.1 | - | - | - | - | - |
| Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | - | - | - | - | - |
| 2-nitropropane | mg/kg | 10 | - | - | - | - | - |
| Bromodichloromethane | mg/kg | 0.1 | - | - | - | - | - |
| MIBK (4-methyl-2-pentanone) | mg/kg | 1 | - | - | - | - | - |
| cis-1,3-dichloropropene | mg/kg | 0.1 | - | - | - | - | - |
| trans-1,3-dichloropropene | mg/kg | 0.1 | - | - | - | - | - |
| 1,1,2-trichloroethane | mg/kg | 0.1 | - | - | - | - | - |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1,3-dichloropropane | mg/kg | 0.1 | - | - | - | - | - |
| Chlorodibromomethane | mg/kg | 0.1 | - | - | - | - | - |
| 2-hexanone (MBK) | mg/kg | 5 | - | - | - | - | - |
| 1,2-dibromoethane (EDB) | mg/kg | 0.1 | - | - | - | - | - |
| Tetrachloroethene (Perchloroethylene,PCE) | mg/kg | 0.1 | - | - | - | - | - |
| 1,1,1,2-tetrachloroethane | mg/kg | 0.1 | - | - | - | - | - |
| Chlorobenzene | mg/kg | 0.1 | - | - | - | - | - |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Bromoform | mg/kg | 0.1 | - | - | - | - | - |
| m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| cis-1,4-dichloro-2-butene | mg/kg | 1 | - | - | - | - | - |
| Styrene (Vinyl benzene) | mg/kg | 0.1 | - | - | - | - | - |
| 1,1,2,2-tetrachloroethane | mg/kg | 0.1 | - | - | - | - | - |
| 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 |
| 1,2,3-trichloropropane | mg/kg | 0.1 | - | - | - | - | - |
| trans-1,4-dichloro-2-butene | mg/kg | 1 | - | - | - | - | - |
| Isopropylbenzene (Cumene) | mg/kg | 0.1 | - | - | - | - | - |
| Bromobenzene | mg/kg | 0.1 | - | - | - | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP7 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.016 | TP7 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.017 | TP8 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.018 | TP8 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.019 | TP9 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.020 |
|---|---|---|---|---|---|---|---|
| n-propylbenzene | mg/kg | 0.1 | - | - | - | - | - |
| 2-chlorotoluene | mg/kg | 0.1 | - | - | - | - | - |
| 4-chlorotoluene | mg/kg | 0.1 | - | - | - | - | - |
| 1,3,5-trimethylbenzene | mg/kg | 0.1 | - | - | - | - | - |
| tert-butylbenzene | mg/kg | 0.1 | - | - | - | - | - |
| 1,2,4-trimethylbenzene | mg/kg | 0.1 | - | - | - | - | - |
| sec-butylbenzene | mg/kg | 0.1 | - | - | - | - | - |
| 1,3-dichlorobenzene | mg/kg | 0.1 | - | - | - | - | - |
| 1,4-dichlorobenzene | mg/kg | 0.1 | - | - | - | - | - |
| p-isopropyltoluene | mg/kg | 0.1 | - | - | - | - | - |
| 1,2-dichlorobenzene | mg/kg | 0.1 | - | - | - | - | - |
| n-butylbenzene | mg/kg | 0.1 | - | - | - | - | - |
| 1,2-dibromo-3-chloropropane | mg/kg | 0.1 | - | - | - | - | - |
| 1,2,4-trichlorobenzene | mg/kg | 0.1 | - | - | - | - | - |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | - | - | - | - | - |
| 1,2,3-trichlorobenzene | mg/kg | 0.1 | - | - | - | - | - |
| Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | <0.6 | <0.6 | <0.6 |
| Total VOC* | mg/kg | 24 | - | - | - | - | - |
| Total Other Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | - | - | - | - |
| Total Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | - | - | - | - |
| Total MAH VIC EPA (BTEX+Styrene)* | mg/kg | 0.4 | - | - | - | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP9 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.021 | TP10 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.022 | TP10 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.023 | TP11 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.024 | TP10 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.025 |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | mg/kg | 1 | <1 | - | - | - | - |
| Chloromethane | mg/kg | 1 | <1 | - | - | - | - |
| Vinyl chloride (Chloroethene) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Bromomethane | mg/kg | 1 | <1 | - | - | - | - |
| Chloroethane | mg/kg | 1 | <1 | - | - | - | - |
| Trichlorofluoromethane | mg/kg | 1 | <1 | - | - | - | - |
| Acetone (2-propanone) | mg/kg | 10 | <10 | - | - | - | - |
| Iodomethane | mg/kg | 5 | <5 | - | - | - | - |
| 1,1-dichloroethene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Acrylonitrile | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Dichloromethane (Methylene chloride) | mg/kg | 0.5 | <0.5 | - | - | - | - |
| Allyl chloride | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Carbon disulfide | mg/kg | 0.5 | <0.5 | - | - | - | - |
| trans-1,2-dichloroethene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,1-dichloroethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Vinyl acetate | mg/kg | 10 | <10 | - | - | - | - |
| MEK (2-butanone) | mg/kg | 10 | <10 | - | - | - | - |
| cis-1,2-dichloroethene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Bromochloromethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Chloroform | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 2,2-dichloropropane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,2-dichloroethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,1,1-trichloroethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,1-dichloropropene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Carbon tetrachloride | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibromomethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,2-dichloropropane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 2-nitropropane | mg/kg | 10 | <10 | - | - | - | - |
| Bromodichloromethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| MIBK (4-methyl-2-pentanone) | mg/kg | 1 | <1 | - | - | - | - |
| cis-1,3-dichloropropene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| trans-1,3-dichloropropene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,1,2-trichloroethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1,3-dichloropropane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Chlorodibromomethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 2-hexanone (MBK) | mg/kg | 5 | <5 | - | - | - | - |
| 1,2-dibromoethane (EDB) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Tetrachloroethene (Perchloroethylene,PCE) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,1,1,2-tetrachloroethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Chlorobenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Bromoform | mg/kg | 0.1 | <0.1 | - | - | - | - |
| m/p-xylene | mg/kg | 0.2 | **0.3** | <0.2 | <0.2 | <0.2 | <0.2 |
| cis-1,4-dichloro-2-butene | mg/kg | 1 | <1 | - | - | - | - |
| Styrene (Vinyl benzene) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,1,2,2-tetrachloroethane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| o-xylene | mg/kg | 0.1 | **0.1** | <0.1 | <0.1 | <0.1 | <0.1 |
| Total Xylenes | mg/kg | 0.3 | **0.4** | <0.3 | <0.3 | <0.3 | <0.3 |
| 1,2,3-trichloropropane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| trans-1,4-dichloro-2-butene | mg/kg | 1 | <1 | - | - | - | - |
| Isopropylbenzene (Cumene) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Bromobenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP9 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.021 | TP10 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.022 | TP10 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.023 | TP11 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.024 | TP10 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.025 |
|---|---|---|---|---|---|---|---|
| n-propylbenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 2-chlorotoluene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 4-chlorotoluene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,3,5-trimethylbenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| tert-butylbenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,2,4-trimethylbenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| sec-butylbenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,3-dichlorobenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,4-dichlorobenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| p-isopropyltoluene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,2-dichlorobenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| n-butylbenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,2-dibromo-3-chloropropane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,2,4-trichlorobenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| 1,2,3-trichlorobenzene | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | <0.6 | <0.6 | <0.6 |
| Total VOC* | mg/kg | 24 | <24 | - | - | - | - |
| Total Other Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | <1.8 | - | - | - | - |
| Total Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | <1.8 | - | - | - | - |
| Total MAH VIC EPA (BTEX+Styrene)* | mg/kg | 0.4 | **0.5** | - | - | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP11 0.2 SOIL - 6/4/2020 SE204895.026 | TP11 0.5 SOIL - 6/4/2020 SE204895.027 | TP12 0 SOIL - 6/4/2020 SE204895.028 | TP12 0.5 SOIL - 6/4/2020 SE204895.029 | TP12 0.7 SOIL - 6/4/2020 SE204895.030 |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | mg/kg | 1 | - | - | - | <1 | - |
| Chloromethane | mg/kg | 1 | - | - | - | <1 | - |
| Vinyl chloride (Chloroethene) | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Bromomethane | mg/kg | 1 | - | - | - | <1 | - |
| Chloroethane | mg/kg | 1 | - | - | - | <1 | - |
| Trichlorofluoromethane | mg/kg | 1 | - | - | - | <1 | - |
| Acetone (2-propanone) | mg/kg | 10 | - | - | - | <10 | - |
| Iodomethane | mg/kg | 5 | - | - | - | <5 | - |
| 1,1-dichloroethene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Acrylonitrile | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Dichloromethane (Methylene chloride) | mg/kg | 0.5 | - | - | - | <0.5 | - |
| Allyl chloride | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Carbon disulfide | mg/kg | 0.5 | - | - | - | <0.5 | - |
| trans-1,2-dichloroethene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,1-dichloroethane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Vinyl acetate | mg/kg | 10 | - | - | - | <10 | - |
| MEK (2-butanone) | mg/kg | 10 | - | - | - | <10 | - |
| cis-1,2-dichloroethene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Bromochloromethane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Chloroform | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 2,2-dichloropropane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,2-dichloroethane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,1,1-trichloroethane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,1-dichloropropene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Carbon tetrachloride | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibromomethane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,2-dichloropropane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 2-nitropropane | mg/kg | 10 | - | - | - | <10 | - |
| Bromodichloromethane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| MIBK (4-methyl-2-pentanone) | mg/kg | 1 | - | - | - | <1 | - |
| cis-1,3-dichloropropene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| trans-1,3-dichloropropene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,1,2-trichloroethane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1,3-dichloropropane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Chlorodibromomethane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 2-hexanone (MBK) | mg/kg | 5 | - | - | - | <5 | - |
| 1,2-dibromoethane (EDB) | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Tetrachloroethene (Perchloroethylene,PCE) | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,1,1,2-tetrachloroethane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Chlorobenzene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Bromoform | mg/kg | 0.1 | - | - | - | <0.1 | - |
| m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| cis-1,4-dichloro-2-butene | mg/kg | 1 | - | - | - | <1 | - |
| Styrene (Vinyl benzene) | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,1,2,2-tetrachloroethane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 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 |
| 1,2,3-trichloropropane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| trans-1,4-dichloro-2-butene | mg/kg | 1 | - | - | - | <1 | - |
| Isopropylbenzene (Cumene) | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Bromobenzene | mg/kg | 0.1 | - | - | - | <0.1 | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP11 0.2<br>SOIL<br>-<br>6/4/2020<br>SE204895.026 | TP11 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.027 | TP12 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.028 | TP12 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.029 | TP12 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.030 |
|---|---|---|---|---|---|---|---|
| n-propylbenzene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 2-chlorotoluene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 4-chlorotoluene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,3,5-trimethylbenzene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| tert-butylbenzene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,2,4-trimethylbenzene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| sec-butylbenzene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,3-dichlorobenzene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,4-dichlorobenzene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| p-isopropyltoluene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,2-dichlorobenzene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| n-butylbenzene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,2-dibromo-3-chloropropane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,2,4-trichlorobenzene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| 1,2,3-trichlorobenzene | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | <0.6 | <0.6 | <0.6 |
| Total VOC* | mg/kg | 24 | - | - | - | <24 | - |
| Total Other Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | - | - | <1.8 | - |
| Total Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | - | - | <1.8 | - |
| Total MAH VIC EPA (BTEX+Styrene)* | mg/kg | 0.4 | - | - | - | <0.4 | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP13 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.031 | TP13 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.032 | TP13 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.033 | TP14 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.034 | TP14 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.035 |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | mg/kg | 1 | - | <1 | - | - | - |
| Chloromethane | mg/kg | 1 | - | <1 | - | - | - |
| Vinyl chloride (Chloroethene) | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Bromomethane | mg/kg | 1 | - | <1 | - | - | - |
| Chloroethane | mg/kg | 1 | - | <1 | - | - | - |
| Trichlorofluoromethane | mg/kg | 1 | - | <1 | - | - | - |
| Acetone (2-propanone) | mg/kg | 10 | - | <10 | - | - | - |
| Iodomethane | mg/kg | 5 | - | <5 | - | - | - |
| 1,1-dichloroethene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Acrylonitrile | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Dichloromethane (Methylene chloride) | mg/kg | 0.5 | - | <0.5 | - | - | - |
| Allyl chloride | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Carbon disulfide | mg/kg | 0.5 | - | <0.5 | - | - | - |
| trans-1,2-dichloroethene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,1-dichloroethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Vinyl acetate | mg/kg | 10 | - | <10 | - | - | - |
| MEK (2-butanone) | mg/kg | 10 | - | <10 | - | - | - |
| cis-1,2-dichloroethene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Bromochloromethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Chloroform | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 2,2-dichloropropane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,2-dichloroethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,1,1-trichloroethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,1-dichloropropene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Carbon tetrachloride | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibromomethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,2-dichloropropane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 2-nitropropane | mg/kg | 10 | - | <10 | - | - | - |
| Bromodichloromethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| MIBK (4-methyl-2-pentanone) | mg/kg | 1 | - | <1 | - | - | - |
| cis-1,3-dichloropropene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| trans-1,3-dichloropropene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,1,2-trichloroethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1,3-dichloropropane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Chlorodibromomethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 2-hexanone (MBK) | mg/kg | 5 | - | <5 | - | - | - |
| 1,2-dibromoethane (EDB) | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Tetrachloroethene (Perchloroethylene,PCE) | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,1,1,2-tetrachloroethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Chlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Bromoform | mg/kg | 0.1 | - | <0.1 | - | - | - |
| m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| cis-1,4-dichloro-2-butene | mg/kg | 1 | - | <1 | - | - | - |
| Styrene (Vinyl benzene) | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,1,2,2-tetrachloroethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 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 |
| 1,2,3-trichloropropane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| trans-1,4-dichloro-2-butene | mg/kg | 1 | - | <1 | - | - | - |
| Isopropylbenzene (Cumene) | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Bromobenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP13 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.031 | TP13 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.032 | TP13 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.033 | TP14 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.034 | TP14 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.035 |
|---|---|---|---|---|---|---|---|
| n-propylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 2-chlorotoluene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 4-chlorotoluene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,3,5-trimethylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| tert-butylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,2,4-trimethylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| sec-butylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,3-dichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,4-dichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| p-isopropyltoluene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,2-dichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| n-butylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,2-dibromo-3-chloropropane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,2,4-trichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,2,3-trichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | <0.6 | <0.6 | <0.6 |
| Total VOC* | mg/kg | 24 | - | <24 | - | - | - |
| Total Other Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | <1.8 | - | - | - |
| Total Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | <1.8 | - | - | - |
| Total MAH VIC EPA (BTEX+Styrene)* | mg/kg | 0.4 | - | <0.4 | - | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP15 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.036 | TP15 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.037 | TP16 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.038 | TP17 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.040 | TP18 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.041 |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | mg/kg | 1 | <1 | - | <1 | - | - |
| Chloromethane | mg/kg | 1 | <1 | - | <1 | - | - |
| Vinyl chloride (Chloroethene) | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Bromomethane | mg/kg | 1 | <1 | - | <1 | - | - |
| Chloroethane | mg/kg | 1 | <1 | - | <1 | - | - |
| Trichlorofluoromethane | mg/kg | 1 | <1 | - | <1 | - | - |
| Acetone (2-propanone) | mg/kg | 10 | <10 | - | <10 | - | - |
| Iodomethane | mg/kg | 5 | <5 | - | <5 | - | - |
| 1,1-dichloroethene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Acrylonitrile | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Dichloromethane (Methylene chloride) | mg/kg | 0.5 | <0.5 | - | <0.5 | - | - |
| Allyl chloride | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Carbon disulfide | mg/kg | 0.5 | <0.5 | - | <0.5 | - | - |
| trans-1,2-dichloroethene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,1-dichloroethane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Vinyl acetate | mg/kg | 10 | <10 | - | <10 | - | - |
| MEK (2-butanone) | mg/kg | 10 | <10 | - | <10 | - | - |
| cis-1,2-dichloroethene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Bromochloromethane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Chloroform | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 2,2-dichloropropane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,2-dichloroethane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,1,1-trichloroethane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,1-dichloropropene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Carbon tetrachloride | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibromomethane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,2-dichloropropane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 2-nitropropane | mg/kg | 10 | <10 | - | <10 | - | - |
| Bromodichloromethane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| MIBK (4-methyl-2-pentanone) | mg/kg | 1 | <1 | - | <1 | - | - |
| cis-1,3-dichloropropene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| trans-1,3-dichloropropene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,1,2-trichloroethane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1,3-dichloropropane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Chlorodibromomethane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 2-hexanone (MBK) | mg/kg | 5 | <5 | - | <5 | - | - |
| 1,2-dibromoethane (EDB) | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Tetrachloroethene (Perchloroethylene,PCE) | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,1,1,2-tetrachloroethane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Chlorobenzene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Bromoform | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| cis-1,4-dichloro-2-butene | mg/kg | 1 | <1 | - | <1 | - | - |
| Styrene (Vinyl benzene) | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,1,2,2-tetrachloroethane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 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 |
| 1,2,3-trichloropropane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| trans-1,4-dichloro-2-butene | mg/kg | 1 | <1 | - | <1 | - | - |
| Isopropylbenzene (Cumene) | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Bromobenzene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP15 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.036 | TP15 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.037 | TP16 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.038 | TP17 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.040 | TP18 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.041 |
|---|---|---|---|---|---|---|---|
| n-propylbenzene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 2-chlorotoluene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 4-chlorotoluene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,3,5-trimethylbenzene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| tert-butylbenzene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,2,4-trimethylbenzene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| sec-butylbenzene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,3-dichlorobenzene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,4-dichlorobenzene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| p-isopropyltoluene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,2-dichlorobenzene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| n-butylbenzene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,2-dibromo-3-chloropropane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,2,4-trichlorobenzene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| 1,2,3-trichlorobenzene | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | <0.6 | <0.6 | <0.6 |
| Total VOC* | mg/kg | 24 | <24 | - | <24 | - | - |
| Total Other Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | <1.8 | - | <1.8 | - | - |
| Total Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | <1.8 | - | <1.8 | - | - |
| Total MAH VIC EPA (BTEX+Styrene)* | mg/kg | 0.4 | <0.4 | - | <0.4 | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP19 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.042 | TP19 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.043 | TP20 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.044 | TP20 0.4<br>SOIL<br>-<br>6/4/2020<br>SE204895.045 | TP21 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.046 |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | mg/kg | 1 | - | <1 | - | - | - |
| Chloromethane | mg/kg | 1 | - | <1 | - | - | - |
| Vinyl chloride (Chloroethene) | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Bromomethane | mg/kg | 1 | - | <1 | - | - | - |
| Chloroethane | mg/kg | 1 | - | <1 | - | - | - |
| Trichlorofluoromethane | mg/kg | 1 | - | <1 | - | - | - |
| Acetone (2-propanone) | mg/kg | 10 | - | <10 | - | - | - |
| Iodomethane | mg/kg | 5 | - | <5 | - | - | - |
| 1,1-dichloroethene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Acrylonitrile | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Dichloromethane (Methylene chloride) | mg/kg | 0.5 | - | <0.5 | - | - | - |
| Allyl chloride | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Carbon disulfide | mg/kg | 0.5 | - | <0.5 | - | - | - |
| trans-1,2-dichloroethene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,1-dichloroethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Vinyl acetate | mg/kg | 10 | - | <10 | - | - | - |
| MEK (2-butanone) | mg/kg | 10 | - | <10 | - | - | - |
| cis-1,2-dichloroethene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Bromochloromethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Chloroform | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 2,2-dichloropropane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,2-dichloroethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,1,1-trichloroethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,1-dichloropropene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Carbon tetrachloride | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibromomethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,2-dichloropropane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 2-nitropropane | mg/kg | 10 | - | <10 | - | - | - |
| Bromodichloromethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| MIBK (4-methyl-2-pentanone) | mg/kg | 1 | - | <1 | - | - | - |
| cis-1,3-dichloropropene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| trans-1,3-dichloropropene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,1,2-trichloroethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1,3-dichloropropane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Chlorodibromomethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 2-hexanone (MBK) | mg/kg | 5 | - | <5 | - | - | - |
| 1,2-dibromoethane (EDB) | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Tetrachloroethene (Perchloroethylene,PCE) | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,1,1,2-tetrachloroethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Chlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Bromoform | mg/kg | 0.1 | - | <0.1 | - | - | - |
| m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| cis-1,4-dichloro-2-butene | mg/kg | 1 | - | <1 | - | - | - |
| Styrene (Vinyl benzene) | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,1,2,2-tetrachloroethane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 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 |
| 1,2,3-trichloropropane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| trans-1,4-dichloro-2-butene | mg/kg | 1 | - | <1 | - | - | - |
| Isopropylbenzene (Cumene) | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Bromobenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP19 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.042 | TP19 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.043 | TP20 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.044 | TP20 0.4<br>SOIL<br>-<br>6/4/2020<br>SE204895.045 | TP21 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.046 |
|---|---|---|---|---|---|---|---|
| n-propylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 2-chlorotoluene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 4-chlorotoluene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,3,5-trimethylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| tert-butylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,2,4-trimethylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| sec-butylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,3-dichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,4-dichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| p-isopropyltoluene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,2-dichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| n-butylbenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,2-dibromo-3-chloropropane | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,2,4-trichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| 1,2,3-trichlorobenzene | mg/kg | 0.1 | - | <0.1 | - | - | - |
| Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | <0.6 | <0.6 | <0.6 |
| Total VOC* | mg/kg | 24 | - | <24 | - | - | - |
| Total Other Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | <1.8 | - | - | - |
| Total Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | <1.8 | - | - | - |
| Total MAH VIC EPA (BTEX+Styrene)* | mg/kg | 0.4 | - | <0.4 | - | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP21 1 SOIL - 7/4/2020 SE204895.047 | TP22 0 SOIL - 7/4/2020 SE204895.048 | TP22 1 SOIL - 7/4/2020 SE204895.049 | TP23 0 SOIL - 7/4/2020 SE204895.050 | TP23 0.4 SOIL - 7/4/2020 SE204895.051 |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | mg/kg | 1 | - | - | - | - | <1 |
| Chloromethane | mg/kg | 1 | - | - | - | - | <1 |
| Vinyl chloride (Chloroethene) | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Bromomethane | mg/kg | 1 | - | - | - | - | <1 |
| Chloroethane | mg/kg | 1 | - | - | - | - | <1 |
| Trichlorofluoromethane | mg/kg | 1 | - | - | - | - | <1 |
| Acetone (2-propanone) | mg/kg | 10 | - | - | - | - | <10 |
| Iodomethane | mg/kg | 5 | - | - | - | - | <5 |
| 1,1-dichloroethene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Acrylonitrile | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Dichloromethane (Methylene chloride) | mg/kg | 0.5 | - | - | - | - | <0.5 |
| Allyl chloride | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Carbon disulfide | mg/kg | 0.5 | - | - | - | - | <0.5 |
| trans-1,2-dichloroethene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,1-dichloroethane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Vinyl acetate | mg/kg | 10 | - | - | - | - | <10 |
| MEK (2-butanone) | mg/kg | 10 | - | - | - | - | <10 |
| cis-1,2-dichloroethene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Bromochloromethane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Chloroform | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 2,2-dichloropropane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,2-dichloroethane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,1,1-trichloroethane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,1-dichloropropene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Carbon tetrachloride | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibromomethane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,2-dichloropropane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 2-nitropropane | mg/kg | 10 | - | - | - | - | <10 |
| Bromodichloromethane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| MIBK (4-methyl-2-pentanone) | mg/kg | 1 | - | - | - | - | <1 |
| cis-1,3-dichloropropene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| trans-1,3-dichloropropene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,1,2-trichloroethane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1,3-dichloropropane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Chlorodibromomethane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 2-hexanone (MBK) | mg/kg | 5 | - | - | - | - | <5 |
| 1,2-dibromoethane (EDB) | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Tetrachloroethene (Perchloroethylene,PCE) | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,1,1,2-tetrachloroethane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Chlorobenzene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Bromoform | mg/kg | 0.1 | - | - | - | - | <0.1 |
| m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| cis-1,4-dichloro-2-butene | mg/kg | 1 | - | - | - | - | <1 |
| Styrene (Vinyl benzene) | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,1,2,2-tetrachloroethane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 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 |
| 1,2,3-trichloropropane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| trans-1,4-dichloro-2-butene | mg/kg | 1 | - | - | - | - | <1 |
| Isopropylbenzene (Cumene) | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Bromobenzene | mg/kg | 0.1 | - | - | - | - | <0.1 |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP21 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.047 | TP22 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.048 | TP22 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.049 | TP23 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.050 | TP23 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.051 |
|---|---|---|---|---|---|---|---|
| n-propylbenzene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 2-chlorotoluene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 4-chlorotoluene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,3,5-trimethylbenzene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| tert-butylbenzene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,2,4-trimethylbenzene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| sec-butylbenzene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,3-dichlorobenzene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,4-dichlorobenzene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| p-isopropyltoluene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,2-dichlorobenzene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| n-butylbenzene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,2-dibromo-3-chloropropane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,2,4-trichlorobenzene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| 1,2,3-trichlorobenzene | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | <0.6 | <0.6 | <0.6 |
| Total VOC* | mg/kg | 24 | - | - | - | - | <24 |
| Total Other Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | - | - | - | <1.8 |
| Total Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | - | - | - | <1.8 |
| Total MAH VIC EPA (BTEX+Styrene)* | mg/kg | 0.4 | - | - | - | - | <0.4 |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP23 0.5<br>SOIL<br>-<br>7/4/2020<br>SE204895.052 | QC1<br>SOIL<br>-<br>6/4/2020<br>SE204895.053 | QC2<br>SOIL<br>-<br>6/4/2020<br>SE204895.054 | Trip Blank<br>SOIL<br>-<br>6/4/2020<br>SE204895.055 | Trip Spike<br>SOIL<br>-<br>6/4/2020<br>SE204895.056 |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | mg/kg | 1 | - | - | - | - | - |
| Chloromethane | mg/kg | 1 | - | - | - | - | - |
| Vinyl chloride (Chloroethene) | mg/kg | 0.1 | - | - | - | - | - |
| Bromomethane | mg/kg | 1 | - | - | - | - | - |
| Chloroethane | mg/kg | 1 | - | - | - | - | - |
| Trichlorofluoromethane | mg/kg | 1 | - | - | - | - | - |
| Acetone (2-propanone) | mg/kg | 10 | - | - | - | - | - |
| Iodomethane | mg/kg | 5 | - | - | - | - | - |
| 1,1-dichloroethene | mg/kg | 0.1 | - | - | - | - | - |
| Acrylonitrile | mg/kg | 0.1 | - | - | - | - | - |
| Dichloromethane (Methylene chloride) | mg/kg | 0.5 | - | - | - | - | - |
| Allyl chloride | mg/kg | 0.1 | - | - | - | - | - |
| Carbon disulfide | mg/kg | 0.5 | - | - | - | - | - |
| trans-1,2-dichloroethene | mg/kg | 0.1 | - | - | - | - | - |
| MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | - | - | - | - | - |
| 1,1-dichloroethane | mg/kg | 0.1 | - | - | - | - | - |
| Vinyl acetate | mg/kg | 10 | - | - | - | - | - |
| MEK (2-butanone) | mg/kg | 10 | - | - | - | - | - |
| cis-1,2-dichloroethene | mg/kg | 0.1 | - | - | - | - | - |
| Bromochloromethane | mg/kg | 0.1 | - | - | - | - | - |
| Chloroform | mg/kg | 0.1 | - | - | - | - | - |
| 2,2-dichloropropane | mg/kg | 0.1 | - | - | - | - | - |
| 1,2-dichloroethane | mg/kg | 0.1 | - | - | - | - | - |
| 1,1,1-trichloroethane | mg/kg | 0.1 | - | - | - | - | - |
| 1,1-dichloropropene | mg/kg | 0.1 | - | - | - | - | - |
| Carbon tetrachloride | mg/kg | 0.1 | - | - | - | - | - |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | [101%] |
| Dibromomethane | mg/kg | 0.1 | - | - | - | - | - |
| 1,2-dichloropropane | mg/kg | 0.1 | - | - | - | - | - |
| Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | - | - | - | - | - |
| 2-nitropropane | mg/kg | 10 | - | - | - | - | - |
| Bromodichloromethane | mg/kg | 0.1 | - | - | - | - | - |
| MIBK (4-methyl-2-pentanone) | mg/kg | 1 | - | - | - | - | - |
| cis-1,3-dichloropropene | mg/kg | 0.1 | - | - | - | - | - |
| trans-1,3-dichloropropene | mg/kg | 0.1 | - | - | - | - | - |
| 1,1,2-trichloroethane | mg/kg | 0.1 | - | - | - | - | - |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | [97%] |
| 1,3-dichloropropane | mg/kg | 0.1 | - | - | - | - | - |
| Chlorodibromomethane | mg/kg | 0.1 | - | - | - | - | - |
| 2-hexanone (MBK) | mg/kg | 5 | - | - | - | - | - |
| 1,2-dibromoethane (EDB) | mg/kg | 0.1 | - | - | - | - | - |
| Tetrachloroethene (Perchloroethylene,PCE) | mg/kg | 0.1 | - | - | - | - | - |
| 1,1,1,2-tetrachloroethane | mg/kg | 0.1 | - | - | - | - | - |
| Chlorobenzene | mg/kg | 0.1 | - | - | - | - | - |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | [95%] |
| Bromoform | mg/kg | 0.1 | - | - | - | - | - |
| m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | [95%] |
| cis-1,4-dichloro-2-butene | mg/kg | 1 | - | - | - | - | - |
| Styrene (Vinyl benzene) | mg/kg | 0.1 | - | - | - | - | - |
| 1,1,2,2-tetrachloroethane | mg/kg | 0.1 | - | - | - | - | - |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | [94%] |
| Total Xylenes | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | - |
| 1,2,3-trichloropropane | mg/kg | 0.1 | - | - | - | - | - |
| trans-1,4-dichloro-2-butene | mg/kg | 1 | - | - | - | - | - |
| Isopropylbenzene (Cumene) | mg/kg | 0.1 | - | - | - | - | - |
| Bromobenzene | mg/kg | 0.1 | - | - | - | - | - |

## VOC's in Soil [AN433] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP23 0.5<br>SOIL<br>-<br>7/4/2020<br>SE204895.052 | QC1<br>SOIL<br>-<br>6/4/2020<br>SE204895.053 | QC2<br>SOIL<br>-<br>6/4/2020<br>SE204895.054 | Trip Blank<br>SOIL<br>-<br>6/4/2020<br>SE204895.055 | Trip Spike<br>SOIL<br>-<br>6/4/2020<br>SE204895.056 |
|---|---|---|---|---|---|---|---|
| n-propylbenzene | mg/kg | 0.1 | - | - | - | - | - |
| 2-chlorotoluene | mg/kg | 0.1 | - | - | - | - | - |
| 4-chlorotoluene | mg/kg | 0.1 | - | - | - | - | - |
| 1,3,5-trimethylbenzene | mg/kg | 0.1 | - | - | - | - | - |
| tert-butylbenzene | mg/kg | 0.1 | - | - | - | - | - |
| 1,2,4-trimethylbenzene | mg/kg | 0.1 | - | - | - | - | - |
| sec-butylbenzene | mg/kg | 0.1 | - | - | - | - | - |
| 1,3-dichlorobenzene | mg/kg | 0.1 | - | - | - | - | - |
| 1,4-dichlorobenzene | mg/kg | 0.1 | - | - | - | - | - |
| p-isopropyltoluene | mg/kg | 0.1 | - | - | - | - | - |
| 1,2-dichlorobenzene | mg/kg | 0.1 | - | - | - | - | - |
| n-butylbenzene | mg/kg | 0.1 | - | - | - | - | - |
| 1,2-dibromo-3-chloropropane | mg/kg | 0.1 | - | - | - | - | - |
| 1,2,4-trichlorobenzene | mg/kg | 0.1 | - | - | - | - | - |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | - |
| Hexachlorobutadiene | mg/kg | 0.1 | - | - | - | - | - |
| 1,2,3-trichlorobenzene | mg/kg | 0.1 | - | - | - | - | - |
| Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | <0.6 | <0.6 | - |
| Total VOC* | mg/kg | 24 | - | - | - | - | - |
| Total Other Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | - | - | - | - |
| Total Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | - | - | - | - | - |
| Total MAH VIC EPA (BTEX+Styrene)* | mg/kg | 0.4 | - | - | - | - | - |

## Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 15/4/2020

| PARAMETER | UOM | LOR | BH1 1-1.1<br>SOIL<br>-<br>6/4/2020<br>SE204895.001 | BH1 2-4.2.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.002 | BH2 1-1.45<br>SOIL<br>-<br>6/4/2020<br>SE204895.003 | BH2 2-2.45<br>SOIL<br>-<br>6/4/2020<br>SE204895.004 | TP1 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.005 |
|---|---|---|---|---|---|---|---|
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| 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 | TP1 1.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.006 | TP2 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.007 | TP2 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.008 | TP3 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.009 | TP3 0.55<br>SOIL<br>-<br>6/4/2020<br>SE204895.010 |
|---|---|---|---|---|---|---|---|
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| 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 | TP4 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.011 | TP4 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.012 | TP5 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.013 | TP5 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.014 | TP6 1<br>SOIL<br>-<br>6/4/2020<br>SE204895.015 |
|---|---|---|---|---|---|---|---|
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| 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 | TP7 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.016 | TP7 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.017 | TP8 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.018 | TP8 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.019 | TP9 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.020 |
|---|---|---|---|---|---|---|---|
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| 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 | TP9 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.021 | TP10 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.022 | TP10 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.023 | TP11 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.024 | TP10 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.025 |
|---|---|---|---|---|---|---|---|
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| 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 | TP11 0.2<br>SOIL<br>-<br>6/4/2020<br>SE204895.026 | TP11 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.027 | TP12 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.028 | TP12 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.029 | TP12 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.030 |
|---|---|---|---|---|---|---|---|
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| 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: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP13 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.031 | TP13 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.032 | TP13 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.033 | TP14 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.034 | TP14 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.035 |
|---|---|---|---|---|---|---|---|
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| 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 | TP15 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.036 | TP15 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.037 | TP16 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.038 | TP17 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.040 | TP18 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.041 |
|---|---|---|---|---|---|---|---|
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| 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 | TP19 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.042 | TP19 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.043 | TP20 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.044 | TP20 0.4<br>SOIL<br>-<br>6/4/2020<br>SE204895.045 | TP21 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.046 |
|---|---|---|---|---|---|---|---|
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| 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 | TP21 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.047 | TP22 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.048 | TP22 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.049 | TP23 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.050 | TP23 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.051 |
|---|---|---|---|---|---|---|---|
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| 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 | TP23 0.5<br>SOIL<br>-<br>7/4/2020<br>SE204895.052 | QC1<br>SOIL<br>-<br>6/4/2020<br>SE204895.053 | QC2<br>SOIL<br>-<br>6/4/2020<br>SE204895.054 | Trip Blank<br>SOIL<br>-<br>6/4/2020<br>SE204895.055 | Trip Spike<br>SOIL<br>-<br>6/4/2020<br>SE204895.056 |
|---|---|---|---|---|---|---|---|
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - | - |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | - | - |
| TRH C6-C10 | mg/kg | 25 | <25 | <25 | <25 | - | - |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | <25 | <25 | <25 | - | - |

## TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 15/4/2020

| PARAMETER | UOM | LOR | BH1 1-1.1 SOIL - 6/4/2020 SE204895.001 | BH1 2-4.2.5 SOIL - 6/4/2020 SE204895.002 | BH2 1-1.45 SOIL - 6/4/2020 SE204895.003 | BH2 2-2.45 SOIL - 6/4/2020 SE204895.004 | TP1 0 SOIL - 6/4/2020 SE204895.005 |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <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 | TP1 1.6 SOIL - 6/4/2020 SE204895.006 | TP2 0 SOIL - 6/4/2020 SE204895.007 | TP2 0.7 SOIL - 6/4/2020 SE204895.008 | TP3 0 SOIL - 6/4/2020 SE204895.009 | TP3 0.55 SOIL - 6/4/2020 SE204895.010 |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <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 | TP4 0 SOIL - 6/4/2020 SE204895.011 | TP4 0.7 SOIL - 6/4/2020 SE204895.012 | TP5 0 SOIL - 6/4/2020 SE204895.013 | TP5 0.5 SOIL - 6/4/2020 SE204895.014 | TP6 1 SOIL - 6/4/2020 SE204895.015 |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <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 |

## TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP7 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.016 | TP7 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.017 | TP8 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.018 | TP8 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.019 | TP9 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.020 |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 | **120** |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 | **120** |
| 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 | **180** |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 | **120** |
| TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | <210 | <210 | <210 | <210 |

| PARAMETER | UOM | LOR | TP9 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.021 | TP10 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.022 | TP10 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.023 | TP11 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.024 | TP10 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.025 |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <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 | TP11 0.2<br>SOIL<br>-<br>6/4/2020<br>SE204895.026 | TP11 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.027 | TP12 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.028 | TP12 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.029 | TP12 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.030 |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <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 |

## TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP13 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.031 | TP13 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.032 | TP13 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.033 | TP14 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.034 | TP14 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.035 |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <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 | TP15 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.036 | TP15 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.037 | TP16 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.038 | TP17 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.040 | TP18 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.041 |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <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 | TP19 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.042 | TP19 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.043 | TP20 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.044 | TP20 0.4<br>SOIL<br>-<br>6/4/2020<br>SE204895.045 | TP21 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.046 |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <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 |

## TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP21 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.047 | TP22 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.048 | TP22 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.049 | TP23 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.050 | TP23 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.051 |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <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 | TP23 0.5<br>SOIL<br>-<br>7/4/2020<br>SE204895.052 | QC1<br>SOIL<br>-<br>6/4/2020<br>SE204895.053 | QC2<br>SOIL<br>-<br>6/4/2020<br>SE204895.054 |
|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 |
| TRH >C10-C16 | mg/kg | 25 | <25 | <25 | <25 |
| TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 |
| TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | <210 | <210 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 15/4/2020

| PARAMETER | UOM | LOR | BH1 1-1.1<br>SOIL<br>-<br>6/4/2020<br>SE204895.001 | BH1 2-4.2.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.002 | BH2 1-1.45<br>SOIL<br>-<br>6/4/2020<br>SE204895.003 | BH2 2-2.45<br>SOIL<br>-<br>6/4/2020<br>SE204895.004 | TP1 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.005 |
|---|---|---|---|---|---|---|---|
| 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 | <0.1 | **0.1** |
| 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 | **0.3** |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | **0.1** | <0.1 | **0.2** |
| 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 | **0.2** |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | **0.2** |
| 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 | **0.2** |
| 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 | **0.3** |
| Total PAH (18) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | **1.7** |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | **1.7** |

| PARAMETER | UOM | LOR | TP1 1.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.006 | TP2 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.007 | TP2 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.008 | TP3 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.009 | TP3 0.55<br>SOIL<br>-<br>6/4/2020<br>SE204895.010 |
|---|---|---|---|---|---|---|---|
| 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 | <0.1 | <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 | <0.1 | <0.1 |
| 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 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 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 | <0.8 |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP4 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.011 | TP4 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.012 | TP5 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.013 | TP5 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.014 | TP6 1<br>SOIL<br>-<br>6/4/2020<br>SE204895.015 |
|---|---|---|---|---|---|---|---|
| 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 | <0.1 | <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 | <0.1 | <0.1 |
| 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 | <0.1 |
| Pyrene | mg/kg | 0.1 | **0.1** | <0.1 | **0.1** | <0.1 | <0.1 |
| 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 | **0.2** | <0.1 | <0.1 |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | **0.3** | <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 | **0.2** | <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 | **0.3** | <0.2 | <0.2 |
| Total PAH (18) | mg/kg | 0.8 | <0.8 | <0.8 | **1.3** | <0.8 | <0.8 |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | <0.8 | **1.3** | <0.8 | <0.8 |

| PARAMETER | UOM | LOR | TP7 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.016 | TP7 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.017 | TP8 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.018 | TP8 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.019 | TP9 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.020 |
|---|---|---|---|---|---|---|---|
| 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 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | **0.2** | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | **0.1** | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | **0.1** | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | **0.2** | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | **0.3** | <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 | **0.2** | <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 | **0.3** | <0.2 | <0.2 | <0.2 | <0.2 |
| Total PAH (18) | mg/kg | 0.8 | **1.3** | <0.8 | <0.8 | <0.8 | <0.8 |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | **1.3** | <0.8 | <0.8 | <0.8 | <0.8 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP9 0.5 SOIL - 6/4/2020 SE204895.021 | TP10 0 SOIL - 6/4/2020 SE204895.022 | TP10 0.6 SOIL - 6/4/2020 SE204895.023 | TP11 0 SOIL - 6/4/2020 SE204895.024 | TP10 0.3 SOIL - 6/4/2020 SE204895.025 |
|---|---|---|---|---|---|---|---|
| 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 | <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 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | **0.7** | <0.1 | **0.1** | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | **0.8** | <0.1 | **0.1** | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | **0.3** | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | **0.4** | <0.1 | <0.1 | <0.1 |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | **0.5** | <0.1 | **0.1** | <0.1 |
| Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | **0.2** | <0.1 | <0.1 | <0.1 |
| Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | **0.4** | <0.1 | <0.1 | <0.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | **0.2** | <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 | **0.3** | <0.1 | <0.1 | <0.1 |
| Carcinogenic PAHs, BaP TEQ <LOR=0 | TEQ (mg/kg) | 0.2 | <0.2 | **0.5** | <0.2 | <0.2 | <0.2 |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 0.3 | <0.3 | **0.6** | <0.3 | <0.3 | <0.3 |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | TEQ (mg/kg) | 0.2 | <0.2 | **0.6** | <0.2 | <0.2 | <0.2 |
| Total PAH (18) | mg/kg | 0.8 | <0.8 | **3.7** | <0.8 | <0.8 | <0.8 |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | **3.7** | <0.8 | <0.8 | <0.8 |

| PARAMETER | UOM | LOR | TP11 0.2 SOIL - 6/4/2020 SE204895.026 | TP11 0.5 SOIL - 6/4/2020 SE204895.027 | TP12 0 SOIL - 6/4/2020 SE204895.028 | TP12 0.5 SOIL - 6/4/2020 SE204895.029 | TP12 0.7 SOIL - 6/4/2020 SE204895.030 |
|---|---|---|---|---|---|---|---|
| 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 | <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 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | **0.2** | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | **0.2** | <0.1 | <0.1 |
| 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 | <0.8 |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP13 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.031 | TP13 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.032 | TP13 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.033 | TP14 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.034 | TP14 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.035 |
|---|---|---|---|---|---|---|---|
| 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 | <0.1 | <0.1 |
| 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 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 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 | <0.8 |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |

| PARAMETER | UOM | LOR | TP15 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.036 | TP15 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.037 | TP16 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.038 | TP17 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.040 | TP18 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.041 |
|---|---|---|---|---|---|---|---|
| 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 | <0.1 | <0.1 |
| 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 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 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 | <0.8 |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP19 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.042 | TP19 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.043 | TP20 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.044 | TP20 0.4<br>SOIL<br>-<br>6/4/2020<br>SE204895.045 | TP21 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.046 |
|---|---|---|---|---|---|---|---|
| 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 | <0.1 | <0.1 |
| 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 | <0.1 |
| Pyrene | mg/kg | 0.1 | **0.1** | <0.1 | <0.1 | <0.1 | <0.1 |
| 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 | **0.2** | <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 | <0.8 |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |

| PARAMETER | UOM | LOR | TP21 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.047 | TP22 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.048 | TP22 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.049 | TP23 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.050 | TP23 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.051 |
|---|---|---|---|---|---|---|---|
| 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 | <0.1 | <0.1 |
| 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 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 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 | <0.8 |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP23 0.5<br>SOIL<br>-<br>7/4/2020<br>SE204895.052 | QC1<br>SOIL<br>-<br>6/4/2020<br>SE204895.053 | QC2<br>SOIL<br>-<br>6/4/2020<br>SE204895.054 |
|---|---|---|---|---|---|
| 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 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(ghi)perylene | mg/kg | 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 |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 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 |
| Total PAH (18) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 |

## OC Pesticides in Soil [AN420] Tested: 15/4/2020

| PARAMETER | UOM | LOR | BH1 1-1.1<br>SOIL<br>-<br>6/4/2020<br>SE204895.001 | BH1 2-4.2.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.002 | BH2 1-1.45<br>SOIL<br>-<br>6/4/2020<br>SE204895.003 | BH2 2-2.45<br>SOIL<br>-<br>6/4/2020<br>SE204895.004 | TP1 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.005 |
|---|---|---|---|---|---|---|---|
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | - | - | - | - | - |
| Alpha BHC | mg/kg | 0.1 | - | - | - | - | - |
| Lindane | mg/kg | 0.1 | - | - | - | - | - |
| Heptachlor | mg/kg | 0.1 | - | - | - | - | - |
| Aldrin | mg/kg | 0.1 | - | - | - | - | - |
| Beta BHC | mg/kg | 0.1 | - | - | - | - | - |
| Delta BHC | mg/kg | 0.1 | - | - | - | - | - |
| Heptachlor epoxide | mg/kg | 0.1 | - | - | - | - | - |
| o,p'-DDE | mg/kg | 0.1 | - | - | - | - | - |
| Alpha Endosulfan | mg/kg | 0.2 | - | - | - | - | - |
| Gamma Chlordane | mg/kg | 0.1 | - | - | - | - | - |
| Alpha Chlordane | mg/kg | 0.1 | - | - | - | - | - |
| trans-Nonachlor | mg/kg | 0.1 | - | - | - | - | - |
| p,p'-DDE | mg/kg | 0.1 | - | - | - | - | - |
| Dieldrin | mg/kg | 0.2 | - | - | - | - | - |
| Endrin | mg/kg | 0.2 | - | - | - | - | - |
| o,p'-DDD | mg/kg | 0.1 | - | - | - | - | - |
| o,p'-DDT | mg/kg | 0.1 | - | - | - | - | - |
| Beta Endosulfan | mg/kg | 0.2 | - | - | - | - | - |
| p,p'-DDD | mg/kg | 0.1 | - | - | - | - | - |
| p,p'-DDT | mg/kg | 0.1 | - | - | - | - | - |
| Endosulfan sulphate | mg/kg | 0.1 | - | - | - | - | - |
| Endrin Aldehyde | mg/kg | 0.1 | - | - | - | - | - |
| Methoxychlor | mg/kg | 0.1 | - | - | - | - | - |
| Endrin Ketone | mg/kg | 0.1 | - | - | - | - | - |
| Isodrin | mg/kg | 0.1 | - | - | - | - | - |
| Mirex | mg/kg | 0.1 | - | - | - | - | - |
| Total CLP OC Pesticides | mg/kg | 1 | - | - | - | - | - |

## OC Pesticides in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP1 1.6 SOIL - 6/4/2020 SE204895.006 | TP2 0 SOIL - 6/4/2020 SE204895.007 | TP2 0.7 SOIL - 6/4/2020 SE204895.008 | TP3 0 SOIL - 6/4/2020 SE204895.009 | TP3 0.55 SOIL - 6/4/2020 SE204895.010 |
|---|---|---|---|---|---|---|---|
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Alpha BHC | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Lindane | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Heptachlor | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Aldrin | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Beta BHC | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Delta BHC | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Heptachlor epoxide | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| o,p'-DDE | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Alpha Endosulfan | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Gamma Chlordane | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Alpha Chlordane | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| trans-Nonachlor | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| p,p'-DDE | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Dieldrin | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Endrin | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| o,p'-DDD | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| o,p'-DDT | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Beta Endosulfan | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| p,p'-DDD | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| p,p'-DDT | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Endosulfan sulphate | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Endrin Aldehyde | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Methoxychlor | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Endrin Ketone | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Isodrin | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Mirex | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Total CLP OC Pesticides | mg/kg | 1 | - | - | <1 | - | <1 |

## OC Pesticides in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP4 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.011 | TP4 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.012 | TP5 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.013 | TP5 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.014 | TP6 1<br>SOIL<br>-<br>6/4/2020<br>SE204895.015 |
|---|---|---|---|---|---|---|---|
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | - | - | - | - | - |
| Alpha BHC | mg/kg | 0.1 | - | - | - | - | - |
| Lindane | mg/kg | 0.1 | - | - | - | - | - |
| Heptachlor | mg/kg | 0.1 | - | - | - | - | - |
| Aldrin | mg/kg | 0.1 | - | - | - | - | - |
| Beta BHC | mg/kg | 0.1 | - | - | - | - | - |
| Delta BHC | mg/kg | 0.1 | - | - | - | - | - |
| Heptachlor epoxide | mg/kg | 0.1 | - | - | - | - | - |
| o,p'-DDE | mg/kg | 0.1 | - | - | - | - | - |
| Alpha Endosulfan | mg/kg | 0.2 | - | - | - | - | - |
| Gamma Chlordane | mg/kg | 0.1 | - | - | - | - | - |
| Alpha Chlordane | mg/kg | 0.1 | - | - | - | - | - |
| trans-Nonachlor | mg/kg | 0.1 | - | - | - | - | - |
| p,p'-DDE | mg/kg | 0.1 | - | - | - | - | - |
| Dieldrin | mg/kg | 0.2 | - | - | - | - | - |
| Endrin | mg/kg | 0.2 | - | - | - | - | - |
| o,p'-DDD | mg/kg | 0.1 | - | - | - | - | - |
| o,p'-DDT | mg/kg | 0.1 | - | - | - | - | - |
| Beta Endosulfan | mg/kg | 0.2 | - | - | - | - | - |
| p,p'-DDD | mg/kg | 0.1 | - | - | - | - | - |
| p,p'-DDT | mg/kg | 0.1 | - | - | - | - | - |
| Endosulfan sulphate | mg/kg | 0.1 | - | - | - | - | - |
| Endrin Aldehyde | mg/kg | 0.1 | - | - | - | - | - |
| Methoxychlor | mg/kg | 0.1 | - | - | - | - | - |
| Endrin Ketone | mg/kg | 0.1 | - | - | - | - | - |
| Isodrin | mg/kg | 0.1 | - | - | - | - | - |
| Mirex | mg/kg | 0.1 | - | - | - | - | - |
| Total CLP OC Pesticides | mg/kg | 1 | - | - | - | - | - |

## OC Pesticides in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP7 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.016 | TP7 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.017 | TP8 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.018 | TP8 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.019 | TP9 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.020 |
|---|---|---|---|---|---|---|---|
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Alpha BHC | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Lindane | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Heptachlor | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Aldrin | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Beta BHC | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Delta BHC | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Heptachlor epoxide | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| o,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Alpha Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | - | - | <0.2 |
| Gamma Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Alpha Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| trans-Nonachlor | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| p,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Dieldrin | mg/kg | 0.2 | <0.2 | <0.2 | - | - | <0.2 |
| Endrin | mg/kg | 0.2 | <0.2 | <0.2 | - | - | <0.2 |
| o,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| o,p'-DDT | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Beta Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | - | - | <0.2 |
| p,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| p,p'-DDT | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Endosulfan sulphate | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Endrin Aldehyde | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Methoxychlor | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Endrin Ketone | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Isodrin | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Mirex | mg/kg | 0.1 | <0.1 | <0.1 | - | - | <0.1 |
| Total CLP OC Pesticides | mg/kg | 1 | <1 | <1 | - | - | <1 |

## OC Pesticides in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP9 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.021 | TP10 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.022 | TP10 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.023 | TP11 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.024 | TP10 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.025 |
|---|---|---|---|---|---|---|---|
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Alpha BHC | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Lindane | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Heptachlor | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Aldrin | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Beta BHC | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Delta BHC | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Heptachlor epoxide | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| o,p'-DDE | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Alpha Endosulfan | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Gamma Chlordane | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Alpha Chlordane | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| trans-Nonachlor | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| p,p'-DDE | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Dieldrin | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Endrin | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| o,p'-DDD | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| o,p'-DDT | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Beta Endosulfan | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| p,p'-DDD | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| p,p'-DDT | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Endosulfan sulphate | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Endrin Aldehyde | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Methoxychlor | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Endrin Ketone | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Isodrin | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Mirex | mg/kg | 0.1 | - | - | <0.1 | - | <0.1 |
| Total CLP OC Pesticides | mg/kg | 1 | - | - | <1 | - | <1 |

## OC Pesticides in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP11 0.2<br>SOIL<br>-<br>6/4/2020<br>SE204895.026 | TP11 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.027 | TP12 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.028 | TP12 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.029 | TP12 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.030 |
|---|---|---|---|---|---|---|---|
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Alpha BHC | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Lindane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Heptachlor | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Aldrin | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Beta BHC | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Delta BHC | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Heptachlor epoxide | mg/kg | 0.1 | <0.1 | - | - | - | - |
| o,p'-DDE | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Alpha Endosulfan | mg/kg | 0.2 | <0.2 | - | - | - | - |
| Gamma Chlordane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Alpha Chlordane | mg/kg | 0.1 | <0.1 | - | - | - | - |
| trans-Nonachlor | mg/kg | 0.1 | <0.1 | - | - | - | - |
| p,p'-DDE | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Dieldrin | mg/kg | 0.2 | <0.2 | - | - | - | - |
| Endrin | mg/kg | 0.2 | <0.2 | - | - | - | - |
| o,p'-DDD | mg/kg | 0.1 | <0.1 | - | - | - | - |
| o,p'-DDT | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Beta Endosulfan | mg/kg | 0.2 | <0.2 | - | - | - | - |
| p,p'-DDD | mg/kg | 0.1 | <0.1 | - | - | - | - |
| p,p'-DDT | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Endosulfan sulphate | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Endrin Aldehyde | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Methoxychlor | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Endrin Ketone | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Isodrin | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Mirex | mg/kg | 0.1 | <0.1 | - | - | - | - |
| Total CLP OC Pesticides | mg/kg | 1 | <1 | - | - | - | - |

## OC Pesticides in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP13 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.031 | TP13 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.032 | TP13 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.033 | TP14 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.034 | TP14 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.035 |
|---|---|---|---|---|---|---|---|
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Alpha BHC | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Lindane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Heptachlor | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Aldrin | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Beta BHC | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Delta BHC | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Heptachlor epoxide | mg/kg | 0.1 | - | - | - | <0.1 | - |
| o,p'-DDE | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Alpha Endosulfan | mg/kg | 0.2 | - | - | - | <0.2 | - |
| Gamma Chlordane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Alpha Chlordane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| trans-Nonachlor | mg/kg | 0.1 | - | - | - | <0.1 | - |
| p,p'-DDE | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Dieldrin | mg/kg | 0.2 | - | - | - | <0.2 | - |
| Endrin | mg/kg | 0.2 | - | - | - | <0.2 | - |
| o,p'-DDD | mg/kg | 0.1 | - | - | - | <0.1 | - |
| o,p'-DDT | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Beta Endosulfan | mg/kg | 0.2 | - | - | - | <0.2 | - |
| p,p'-DDD | mg/kg | 0.1 | - | - | - | <0.1 | - |
| p,p'-DDT | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Endosulfan sulphate | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Endrin Aldehyde | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Methoxychlor | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Endrin Ketone | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Isodrin | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Mirex | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Total CLP OC Pesticides | mg/kg | 1 | - | - | - | <1 | - |

## OC Pesticides in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP15 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.036 | TP15 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.037 | TP16 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.038 | TP17 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.040 | TP18 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.041 |
|---|---|---|---|---|---|---|---|
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Alpha BHC | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Lindane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Heptachlor | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Aldrin | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Beta BHC | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Delta BHC | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Heptachlor epoxide | mg/kg | 0.1 | - | - | - | - | <0.1 |
| o,p'-DDE | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Alpha Endosulfan | mg/kg | 0.2 | - | - | - | - | <0.2 |
| Gamma Chlordane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Alpha Chlordane | mg/kg | 0.1 | - | - | - | - | <0.1 |
| trans-Nonachlor | mg/kg | 0.1 | - | - | - | - | <0.1 |
| p,p'-DDE | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Dieldrin | mg/kg | 0.2 | - | - | - | - | <0.2 |
| Endrin | mg/kg | 0.2 | - | - | - | - | <0.2 |
| o,p'-DDD | mg/kg | 0.1 | - | - | - | - | <0.1 |
| o,p'-DDT | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Beta Endosulfan | mg/kg | 0.2 | - | - | - | - | <0.2 |
| p,p'-DDD | mg/kg | 0.1 | - | - | - | - | <0.1 |
| p,p'-DDT | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Endosulfan sulphate | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Endrin Aldehyde | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Methoxychlor | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Endrin Ketone | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Isodrin | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Mirex | mg/kg | 0.1 | - | - | - | - | <0.1 |
| Total CLP OC Pesticides | mg/kg | 1 | - | - | - | - | <1 |

## OC Pesticides in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP19 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.042 | TP19 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.043 | TP20 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.044 | TP20 0.4<br>SOIL<br>-<br>6/4/2020<br>SE204895.045 | TP21 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.046 |
|---|---|---|---|---|---|---|---|
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Alpha BHC | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Lindane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Heptachlor | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Aldrin | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Beta BHC | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Delta BHC | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Heptachlor epoxide | mg/kg | 0.1 | - | - | - | <0.1 | - |
| o,p'-DDE | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Alpha Endosulfan | mg/kg | 0.2 | - | - | - | <0.2 | - |
| Gamma Chlordane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Alpha Chlordane | mg/kg | 0.1 | - | - | - | <0.1 | - |
| trans-Nonachlor | mg/kg | 0.1 | - | - | - | <0.1 | - |
| p,p'-DDE | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Dieldrin | mg/kg | 0.2 | - | - | - | <0.2 | - |
| Endrin | mg/kg | 0.2 | - | - | - | <0.2 | - |
| o,p'-DDD | mg/kg | 0.1 | - | - | - | <0.1 | - |
| o,p'-DDT | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Beta Endosulfan | mg/kg | 0.2 | - | - | - | <0.2 | - |
| p,p'-DDD | mg/kg | 0.1 | - | - | - | <0.1 | - |
| p,p'-DDT | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Endosulfan sulphate | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Endrin Aldehyde | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Methoxychlor | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Endrin Ketone | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Isodrin | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Mirex | mg/kg | 0.1 | - | - | - | <0.1 | - |
| Total CLP OC Pesticides | mg/kg | 1 | - | - | - | <1 | - |

## OC Pesticides in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP21 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.047 | TP22 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.048 | TP22 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.049 | TP23 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.050 | TP23 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.051 |
|---|---|---|---|---|---|---|---|
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Alpha BHC | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Lindane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Heptachlor | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Aldrin | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Beta BHC | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Delta BHC | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Heptachlor epoxide | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| o,p'-DDE | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Alpha Endosulfan | mg/kg | 0.2 | <0.2 | - | <0.2 | - | - |
| Gamma Chlordane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Alpha Chlordane | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| trans-Nonachlor | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| p,p'-DDE | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Dieldrin | mg/kg | 0.2 | <0.2 | - | <0.2 | - | - |
| Endrin | mg/kg | 0.2 | <0.2 | - | <0.2 | - | - |
| o,p'-DDD | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| o,p'-DDT | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Beta Endosulfan | mg/kg | 0.2 | <0.2 | - | <0.2 | - | - |
| p,p'-DDD | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| p,p'-DDT | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Endosulfan sulphate | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Endrin Aldehyde | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Methoxychlor | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Endrin Ketone | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Isodrin | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Mirex | mg/kg | 0.1 | <0.1 | - | <0.1 | - | - |
| Total CLP OC Pesticides | mg/kg | 1 | <1 | - | <1 | - | - |

## OC Pesticides in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP23 0.5<br>SOIL<br>-<br>7/4/2020<br>SE204895.052 | QC1<br>SOIL<br>-<br>6/4/2020<br>SE204895.053 | QC2<br>SOIL<br>-<br>6/4/2020<br>SE204895.054 |
|---|---|---|---|---|---|
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | - | - | - |
| Alpha BHC | mg/kg | 0.1 | - | - | - |
| Lindane | mg/kg | 0.1 | - | - | - |
| Heptachlor | mg/kg | 0.1 | - | - | - |
| Aldrin | mg/kg | 0.1 | - | - | - |
| Beta BHC | mg/kg | 0.1 | - | - | - |
| Delta BHC | mg/kg | 0.1 | - | - | - |
| Heptachlor epoxide | mg/kg | 0.1 | - | - | - |
| o,p'-DDE | mg/kg | 0.1 | - | - | - |
| Alpha Endosulfan | mg/kg | 0.2 | - | - | - |
| Gamma Chlordane | mg/kg | 0.1 | - | - | - |
| Alpha Chlordane | mg/kg | 0.1 | - | - | - |
| trans-Nonachlor | mg/kg | 0.1 | - | - | - |
| p,p'-DDE | mg/kg | 0.1 | - | - | - |
| Dieldrin | mg/kg | 0.2 | - | - | - |
| Endrin | mg/kg | 0.2 | - | - | - |
| o,p'-DDD | mg/kg | 0.1 | - | - | - |
| o,p'-DDT | mg/kg | 0.1 | - | - | - |
| Beta Endosulfan | mg/kg | 0.2 | - | - | - |
| p,p'-DDD | mg/kg | 0.1 | - | - | - |
| p,p'-DDT | mg/kg | 0.1 | - | - | - |
| Endosulfan sulphate | mg/kg | 0.1 | - | - | - |
| Endrin Aldehyde | mg/kg | 0.1 | - | - | - |
| Methoxychlor | mg/kg | 0.1 | - | - | - |
| Endrin Ketone | mg/kg | 0.1 | - | - | - |
| Isodrin | mg/kg | 0.1 | - | - | - |
| Mirex | mg/kg | 0.1 | - | - | - |
| Total CLP OC Pesticides | mg/kg | 1 | - | - | - |

## OP Pesticides in Soil [AN420] Tested: 15/4/2020

| PARAMETER | UOM | LOR | TP2 0.7 SOIL - 6/4/2020 SE204895.008 | TP3 0.55 SOIL - 6/4/2020 SE204895.010 | TP7 0 SOIL - 6/4/2020 SE204895.016 | TP7 0.6 SOIL - 6/4/2020 SE204895.017 | TP9 0.3 SOIL - 6/4/2020 SE204895.020 |
|---|---|---|---|---|---|---|---|
| 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 | TP10 0.6 SOIL - 6/4/2020 SE204895.023 | TP10 0.3 SOIL - 6/4/2020 SE204895.025 | TP11 0.2 SOIL - 6/4/2020 SE204895.026 | TP14 0.3 SOIL - 6/4/2020 SE204895.034 | TP18 0 SOIL - 6/4/2020 SE204895.041 |
|---|---|---|---|---|---|---|---|
| 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 | TP20 0.4 SOIL - 6/4/2020 SE204895.045 | TP21 1 SOIL - 7/4/2020 SE204895.047 | TP22 1 SOIL - 7/4/2020 SE204895.049 |
|---|---|---|---|---|---|
| Dichlorvos | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 |
| Dimethoate | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 |
| Diazinon (Dimpylate) | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 |
| Fenitrothion | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Malathion | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Parathion-ethyl (Parathion) | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Bromophos Ethyl | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Methidathion | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 |
| Ethion | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Azinphos-methyl (Guthion) | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Total OP Pesticides* | mg/kg | 1.7 | <1.7 | <1.7 | <1.7 |

## PCBs in Soil [AN420] Tested: 15/4/2020

| PARAMETER | UOM | LOR | BH1 1-1.1<br>SOIL<br>-<br>6/4/2020<br>SE204895.001 | BH1 2-4.2.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.002 | BH2 1-1.45<br>SOIL<br>-<br>6/4/2020<br>SE204895.003 | BH2 2-2.45<br>SOIL<br>-<br>6/4/2020<br>SE204895.004 | TP1 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.005 |
|---|---|---|---|---|---|---|---|
| Arochlor 1016 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1221 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1232 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1242 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1248 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1254 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1260 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1262 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1268 | mg/kg | 0.2 | - | - | - | - | - |
| Total PCBs (Arochlors) | mg/kg | 1 | - | - | - | - | - |

| PARAMETER | UOM | LOR | TP1 1.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.006 | TP2 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.007 | TP2 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.008 | TP3 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.009 | TP3 0.55<br>SOIL<br>-<br>6/4/2020<br>SE204895.010 |
|---|---|---|---|---|---|---|---|
| Arochlor 1016 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1221 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1232 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1242 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1248 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1254 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1260 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1262 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1268 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Total PCBs (Arochlors) | mg/kg | 1 | - | - | <1 | - | <1 |

| PARAMETER | UOM | LOR | TP4 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.011 | TP4 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.012 | TP5 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.013 | TP5 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.014 | TP6 1<br>SOIL<br>-<br>6/4/2020<br>SE204895.015 |
|---|---|---|---|---|---|---|---|
| Arochlor 1016 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1221 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1232 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1242 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1248 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1254 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1260 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1262 | mg/kg | 0.2 | - | - | - | - | - |
| Arochlor 1268 | mg/kg | 0.2 | - | - | - | - | - |
| Total PCBs (Arochlors) | mg/kg | 1 | - | - | - | - | - |

PCBs in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP7 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.016 | TP7 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.017 | TP8 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.018 | TP8 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.019 | TP9 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.020 |
|---|---|---|---|---|---|---|---|
| Arochlor 1016 | mg/kg | 0.2 | <0.2 | <0.2 | - | - | <0.2 |
| Arochlor 1221 | mg/kg | 0.2 | <0.2 | <0.2 | - | - | <0.2 |
| Arochlor 1232 | mg/kg | 0.2 | <0.2 | <0.2 | - | - | <0.2 |
| Arochlor 1242 | mg/kg | 0.2 | <0.2 | <0.2 | - | - | <0.2 |
| Arochlor 1248 | mg/kg | 0.2 | <0.2 | <0.2 | - | - | <0.2 |
| Arochlor 1254 | mg/kg | 0.2 | <0.2 | <0.2 | - | - | <0.2 |
| Arochlor 1260 | mg/kg | 0.2 | <0.2 | <0.2 | - | - | <0.2 |
| Arochlor 1262 | mg/kg | 0.2 | <0.2 | <0.2 | - | - | <0.2 |
| Arochlor 1268 | mg/kg | 0.2 | <0.2 | <0.2 | - | - | <0.2 |
| Total PCBs (Arochlors) | mg/kg | 1 | <1 | <1 | - | - | <1 |

| PARAMETER | UOM | LOR | TP9 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.021 | TP10 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.022 | TP10 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.023 | TP11 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.024 | TP10 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.025 |
|---|---|---|---|---|---|---|---|
| Arochlor 1016 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1221 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1232 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1242 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1248 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1254 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1260 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1262 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Arochlor 1268 | mg/kg | 0.2 | - | - | <0.2 | - | <0.2 |
| Total PCBs (Arochlors) | mg/kg | 1 | - | - | <1 | - | <1 |

| PARAMETER | UOM | LOR | TP11 0.2<br>SOIL<br>-<br>6/4/2020<br>SE204895.026 | TP11 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.027 | TP12 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.028 | TP12 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.029 | TP12 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.030 |
|---|---|---|---|---|---|---|---|
| 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 | <1 | - | - | - | - |

## PCBs in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP13 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.031 | TP13 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.032 | TP13 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.033 | TP14 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.034 | TP14 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.035 |
|---|---|---|---|---|---|---|---|
| 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 | - | - | - | <1 | - |

| PARAMETER | UOM | LOR | TP15 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.036 | TP15 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.037 | TP16 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.038 | TP17 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.040 | TP18 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.041 |
|---|---|---|---|---|---|---|---|
| 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 | - | - | - | - | <1 |

| PARAMETER | UOM | LOR | TP19 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.042 | TP19 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.043 | TP20 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.044 | TP20 0.4<br>SOIL<br>-<br>6/4/2020<br>SE204895.045 | TP21 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.046 |
|---|---|---|---|---|---|---|---|
| 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 | - | - | - | <1 | - |

## PCBs in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP21 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.047 | TP22 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.048 | TP22 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.049 | TP23 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.050 | TP23 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.051 |
|---|---|---|---|---|---|---|---|
| Arochlor 1016 | mg/kg | 0.2 | <0.2 | - | <0.2 | - | - |
| Arochlor 1221 | mg/kg | 0.2 | <0.2 | - | <0.2 | - | - |
| Arochlor 1232 | mg/kg | 0.2 | <0.2 | - | <0.2 | - | - |
| Arochlor 1242 | mg/kg | 0.2 | <0.2 | - | <0.2 | - | - |
| Arochlor 1248 | mg/kg | 0.2 | <0.2 | - | <0.2 | - | - |
| Arochlor 1254 | mg/kg | 0.2 | <0.2 | - | <0.2 | - | - |
| Arochlor 1260 | mg/kg | 0.2 | <0.2 | - | <0.2 | - | - |
| Arochlor 1262 | mg/kg | 0.2 | <0.2 | - | <0.2 | - | - |
| Arochlor 1268 | mg/kg | 0.2 | <0.2 | - | <0.2 | - | - |
| Total PCBs (Arochlors) | mg/kg | 1 | <1 | - | <1 | - | - |

| PARAMETER | UOM | LOR | TP23 0.5<br>SOIL<br>-<br>7/4/2020<br>SE204895.052 | QC1<br>SOIL<br>-<br>6/4/2020<br>SE204895.053 | QC2<br>SOIL<br>-<br>6/4/2020<br>SE204895.054 |
|---|---|---|---|---|---|
| Arochlor 1016 | mg/kg | 0.2 | - | - | - |
| Arochlor 1221 | mg/kg | 0.2 | - | - | - |
| Arochlor 1232 | mg/kg | 0.2 | - | - | - |
| Arochlor 1242 | mg/kg | 0.2 | - | - | - |
| Arochlor 1248 | mg/kg | 0.2 | - | - | - |
| Arochlor 1254 | mg/kg | 0.2 | - | - | - |
| Arochlor 1260 | mg/kg | 0.2 | - | - | - |
| Arochlor 1262 | mg/kg | 0.2 | - | - | - |
| Arochlor 1268 | mg/kg | 0.2 | - | - | - |
| Total PCBs (Arochlors) | mg/kg | 1 | - | - | - |

## Speciated Phenols in Soil [AN420] Tested: 15/4/2020

| PARAMETER | UOM | LOR | TP2 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.008 | TP3 0.55<br>SOIL<br>-<br>6/4/2020<br>SE204895.010 | TP7 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.016 | TP7 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.017 | TP9 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.020 |
|---|---|---|---|---|---|---|---|
| Phenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2-methyl phenol (o-cresol) | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | <1 | <1 | <1 | <1 | <1 |
| Total Cresol | mg/kg | 1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 |
| 2-chlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dimethylphenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,6-dichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4,6-trichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2-nitrophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 4-nitrophenol | mg/kg | 1 | <1 | <1 | <1 | <1 | <1 |
| 2,4,5-trichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | <1 | <1 | <1 | <1 | <1 |
| Pentachlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dinitrophenol | mg/kg | 2 | <2 | <2 | <2 | <2 | <2 |
| 4-chloro-3-methylphenol | mg/kg | 2 | <2 | <2 | <2 | <2 | <2 |

| PARAMETER | UOM | LOR | TP10 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.023 | TP10 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.025 | TP11 0.2<br>SOIL<br>-<br>6/4/2020<br>SE204895.026 | TP14 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.034 | TP18 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.041 |
|---|---|---|---|---|---|---|---|
| Phenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2-methyl phenol (o-cresol) | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | <1 | <1 | <1 | <1 | <1 |
| Total Cresol | mg/kg | 1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 |
| 2-chlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dimethylphenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,6-dichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4,6-trichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2-nitrophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 4-nitrophenol | mg/kg | 1 | <1 | <1 | <1 | <1 | <1 |
| 2,4,5-trichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | <1 | <1 | <1 | <1 | <1 |
| Pentachlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dinitrophenol | mg/kg | 2 | <2 | <2 | <2 | <2 | <2 |
| 4-chloro-3-methylphenol | mg/kg | 2 | <2 | <2 | <2 | <2 | <2 |

Speciated Phenols in Soil [AN420] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP20 0.4<br>SOIL<br>-<br>6/4/2020<br>SE204895.045 | TP21 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.047 | TP22 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.049 |
|---|---|---|---|---|---|
| Phenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 |
| 2-methyl phenol (o-cresol) | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 |
| 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | <1 | <1 | <1 |
| Total Cresol | mg/kg | 1.5 | <1.5 | <1.5 | <1.5 |
| 2-chlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dimethylphenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 |
| 2,6-dichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 |
| 2,4,6-trichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 |
| 2-nitrophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 |
| 4-nitrophenol | mg/kg | 1 | <1 | <1 | <1 |
| 2,4,5-trichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 |
| 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | <1 | <1 | <1 |
| Pentachlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dinitrophenol | mg/kg | 2 | <2 | <2 | <2 |
| 4-chloro-3-methylphenol | mg/kg | 2 | <2 | <2 | <2 |

## pH in soil (1:5) [AN101] Tested: 16/4/2020

| PARAMETER | UOM | LOR | BH1 1-1.1<br>SOIL<br>-<br>6/4/2020<br>SE204895.001 | TP8 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.018 | TP11 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.024 | TP14 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.034 | TP17 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.039 |
|---|---|---|---|---|---|---|---|
| pH | pH Units | 0.1 | **8.8** | **7.7** | **8.8** | **8.0** | **9.6** |

| PARAMETER | UOM | LOR | TP19 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.042 | TP22 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.048 | TP22 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.049 |
|---|---|---|---|---|---|
| pH | pH Units | 0.1 | **8.4** | **7.0** | **7.3** |

## Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) [AN122] Tested: 15/4/2020

| PARAMETER | UOM | LOR | BH1 1-1.1 SOIL - 6/4/2020 SE204895.001 | TP8 0 SOIL - 6/4/2020 SE204895.018 | TP11 0 SOIL - 6/4/2020 SE204895.024 | TP14 0.3 SOIL - 6/4/2020 SE204895.034 | TP17 0 SOIL - 6/4/2020 SE204895.039 |
|---|---|---|---|---|---|---|---|
| Exchangeable Sodium, Na | mg/kg | 2 | 36 | 8 | 38 | 4 | 83 |
| Exchangeable Sodium, Na | meq/100g | 0.01 | 0.15 | 0.03 | 0.16 | 0.02 | 0.36 |
| Exchangeable Sodium Percentage* | % | 0.1 | 4.2 | 4.3 | 1.3 | 1.2 | 1.3 |
| Exchangeable Potassium, K | mg/kg | 2 | 20 | 4 | 46 | 4 | 340 |
| Exchangeable Potassium, K | meq/100g | 0.01 | 0.05 | 0.01 | 0.12 | 0.01 | 0.88 |
| Exchangeable Potassium Percentage* | % | 0.1 | 1.4 | 1.3 | 0.9 | 0.7 | 3.0 |
| Exchangeable Calcium, Ca | mg/kg | 2 | 540 | 140 | 2400 | 280 | 5500 |
| Exchangeable Calcium, Ca | meq/100g | 0.01 | 2.7 | 0.71 | 12 | 1.4 | 27 |
| Exchangeable Calcium Percentage* | % | 0.1 | 74.6 | 89.9 | 93.0 | 94.4 | 95.2 |
| Exchangeable Magnesium, Mg | mg/kg | 2 | 88 | 4 | 76 | 7 | 19 |
| Exchangeable Magnesium, Mg | meq/100g | 0.02 | 0.72 | 0.04 | 0.62 | 0.05 | 0.16 |
| Exchangeable Magnesium Percentage* | % | 0.1 | 19.7 | 4.5 | 4.8 | 3.6 | 0.5 |
| Cation Exchange Capacity | meq/100g | 0.02 | 3.6 | 0.79 | 13 | 1.5 | 29 |

| PARAMETER | UOM | LOR | TP19 0 SOIL - 7/4/2020 SE204895.042 | TP22 0 SOIL - 7/4/2020 SE204895.048 | TP22 1 SOIL - 7/4/2020 SE204895.049 |
|---|---|---|---|---|---|
| Exchangeable Sodium, Na | mg/kg | 2 | 19 | 14 | 23 |
| Exchangeable Sodium, Na | meq/100g | 0.01 | 0.08 | 0.06 | 0.10 |
| Exchangeable Sodium Percentage* | % | 0.1 | 1.1 | 2.7 | 3.4 |
| Exchangeable Potassium, K | mg/kg | 2 | 51 | 18 | 30 |
| Exchangeable Potassium, K | meq/100g | 0.01 | 0.13 | 0.05 | 0.08 |
| Exchangeable Potassium Percentage* | % | 0.1 | 1.8 | 2.1 | 2.6 |
| Exchangeable Calcium, Ca | mg/kg | 2 | 1300 | 340 | 420 |
| Exchangeable Calcium, Ca | meq/100g | 0.01 | 6.7 | 1.7 | 2.1 |
| Exchangeable Calcium Percentage* | % | 0.1 | 92.1 | 75.8 | 72.6 |
| Exchangeable Magnesium, Mg | mg/kg | 2 | 44 | 53 | 76 |
| Exchangeable Magnesium, Mg | meq/100g | 0.02 | 0.36 | 0.43 | 0.62 |
| Exchangeable Magnesium Percentage* | % | 0.1 | 5.0 | 19.4 | 21.4 |
| Cation Exchange Capacity | meq/100g | 0.02 | 7.2 | 2.2 | 2.9 |

## Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 15/4/2020

| PARAMETER | UOM | LOR | BH1 1-1.1<br>SOIL<br>-<br>6/4/2020<br>SE204895.001 | BH1 2-4.2.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.002 | BH2 1-1.45<br>SOIL<br>-<br>6/4/2020<br>SE204895.003 | BH2 2-2.45<br>SOIL<br>-<br>6/4/2020<br>SE204895.004 | TP1 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.005 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | 2 | 2 | <1 | <1 | 6 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | 4.0 | 1.0 | 5.7 | 2.2 | 42 |
| Copper, Cu | mg/kg | 0.5 | 6.8 | 1.2 | 4.2 | 0.9 | 56 |
| Lead, Pb | mg/kg | 1 | 6 | <1 | 4 | <1 | 70 |
| Nickel, Ni | mg/kg | 0.5 | 8.2 | 0.9 | 4.5 | 0.5 | 17 |
| Zinc, Zn | mg/kg | 2 | 57 | <2.0 | 61 | 4.0 | 1300 |

| PARAMETER | UOM | LOR | TP1 1.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.006 | TP2 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.007 | TP2 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.008 | TP3 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.009 | TP3 0.55<br>SOIL<br>-<br>6/4/2020<br>SE204895.010 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | 80 | 6 | 7 | 100 | <1 |
| Cadmium, Cd | mg/kg | 0.3 | 0.3 | <0.3 | <0.3 | 1.2 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | 11 | 3.6 | 8.2 | 31 | 1.7 |
| Copper, Cu | mg/kg | 0.5 | 53 | 11 | 67 | 680 | 1.3 |
| Lead, Pb | mg/kg | 1 | 33 | 9 | 120 | 840 | 2 |
| Nickel, Ni | mg/kg | 0.5 | 11 | 9.8 | 4.1 | 4.8 | <0.5 |
| Zinc, Zn | mg/kg | 2 | 510 | 74 | 1500 | 13000 | 33 |

| PARAMETER | UOM | LOR | TP4 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.011 | TP4 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.012 | TP5 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.013 | TP5 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.014 | TP6 1<br>SOIL<br>-<br>6/4/2020<br>SE204895.015 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | 3 | <1 | 900 | 1 | <1 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | 4.8 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | 7.3 | 1.4 | 61 | 0.6 | 1.4 |
| Copper, Cu | mg/kg | 0.5 | 22 | 2.8 | 1700 | 3.7 | 0.9 |
| Lead, Pb | mg/kg | 1 | 34 | 4 | 940 | 5 | 2 |
| Nickel, Ni | mg/kg | 0.5 | 7.1 | 0.9 | 52 | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 2 | 400 | 59 | 18000 | 65 | 56 |

| PARAMETER | UOM | LOR | TP7 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.016 | TP7 0.6<br>SOIL<br>-<br>6/4/2020<br>SE204895.017 | TP8 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.018 | TP8 0.7<br>SOIL<br>-<br>6/4/2020<br>SE204895.019 | TP9 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.020 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | 940 | 2 | 1000 | <1 | 24 |
| Cadmium, Cd | mg/kg | 0.3 | 3.4 | <0.3 | 5.1 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | 72 | 3.9 | 37 | 2.8 | 7.9 |
| Copper, Cu | mg/kg | 0.5 | 2100 | 18 | 2400 | 11 | 40 |
| Lead, Pb | mg/kg | 1 | 1100 | 33 | 4200 | 18 | 46 |
| Nickel, Ni | mg/kg | 0.5 | 38 | 0.8 | 26 | <0.5 | 6.3 |
| Zinc, Zn | mg/kg | 2 | 25000 | 430 | 27000 | 170 | 1100 |

## Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 15/4/2020

(continued)

| PARAMETER | UOM | LOR | TP9 0.5 SOIL - 6/4/2020 SE204895.021 | TP10 0 SOIL - 6/4/2020 SE204895.022 | TP10 0.6 SOIL - 6/4/2020 SE204895.023 | TP11 0 SOIL - 6/4/2020 SE204895.024 | TP10 0.3 SOIL - 6/4/2020 SE204895.025 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | 6 | 27 | 1 | 12 | <1 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | 6.0 | 6.7 | 4.7 | 13 | 1.8 |
| Copper, Cu | mg/kg | 0.5 | 41 | 71 | 21 | 66 | 11 |
| Lead, Pb | mg/kg | 1 | 60 | 83 | 36 | 83 | 12 |
| Nickel, Ni | mg/kg | 0.5 | 7.5 | 10 | 0.7 | 11 | <0.5 |
| Zinc, Zn | mg/kg | 2 | 780 | 1200 | 430 | 1600 | 170 |

| PARAMETER | UOM | LOR | TP11 0.2 SOIL - 6/4/2020 SE204895.026 | TP11 0.5 SOIL - 6/4/2020 SE204895.027 | TP12 0 SOIL - 6/4/2020 SE204895.028 | TP12 0.5 SOIL - 6/4/2020 SE204895.029 | TP12 0.7 SOIL - 6/4/2020 SE204895.030 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | <1 | <1 | 3 | 29 | <1 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | 3.9 | 1.9 | 8.2 | 7.8 | 1.9 |
| Copper, Cu | mg/kg | 0.5 | 4.0 | 1.0 | 13 | 55 | 3.5 |
| Lead, Pb | mg/kg | 1 | 6 | <1 | 25 | 71 | 6 |
| Nickel, Ni | mg/kg | 0.5 | <0.5 | <0.5 | 3.7 | 8.4 | 0.8 |
| Zinc, Zn | mg/kg | 2 | 620 | 30 | 370 | 900 | 69 |

| PARAMETER | UOM | LOR | TP13 0 SOIL - 6/4/2020 SE204895.031 | TP13 0.3 SOIL - 6/4/2020 SE204895.032 | TP13 0.5 SOIL - 6/4/2020 SE204895.033 | TP14 0.3 SOIL - 6/4/2020 SE204895.034 | TP14 0.5 SOIL - 6/4/2020 SE204895.035 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | 17 | 100 | 4 | 11 | <1 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | 0.9 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | 11 | 27 | 3.1 | 18 | 2.9 |
| Copper, Cu | mg/kg | 0.5 | 66 | 520 | 25 | 65 | 0.8 |
| Lead, Pb | mg/kg | 1 | 75 | 1100 | 62 | 120 | 2 |
| Nickel, Ni | mg/kg | 0.5 | 16 | 5.1 | <0.5 | 1.4 | <0.5 |
| Zinc, Zn | mg/kg | 2 | 1200 | 10000 | 490 | 2500 | 170 |

| PARAMETER | UOM | LOR | TP15 0 SOIL - 6/4/2020 SE204895.036 | TP15 0.5 SOIL - 6/4/2020 SE204895.037 | TP16 0.5 SOIL - 6/4/2020 SE204895.038 | TP17 0.3 SOIL - 6/4/2020 SE204895.040 | TP18 0 SOIL - 6/4/2020 SE204895.041 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | 4 | 1 | 1 | 72 | 5 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | 0.9 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | 5.8 | 11 | 20 | 32 | 110 |
| Copper, Cu | mg/kg | 0.5 | 14 | 1.8 | 2.1 | 620 | 58 |
| Lead, Pb | mg/kg | 1 | 27 | 17 | 28 | 1000 | 100 |
| Nickel, Ni | mg/kg | 0.5 | 2.7 | 0.8 | 1.3 | 7.2 | 5.5 |
| Zinc, Zn | mg/kg | 2 | 400 | 480 | 750 | 16000 | 980 |

## Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 15/4/2020

(continued)

| PARAMETER | UOM | LOR | TP19 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.042 | TP19 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.043 | TP20 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.044 | TP20 0.4<br>SOIL<br>-<br>6/4/2020<br>SE204895.045 | TP21 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.046 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | 4 | 5 | <1 | <1 | 4 |
| Cadmium, Cd | mg/kg | 0.3 | 0.5 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | 42 | 15 | 1.7 | 17 | 4.9 |
| Copper, Cu | mg/kg | 0.5 | 100 | 250 | 1.6 | 21 | 21 |
| Lead, Pb | mg/kg | 1 | 190 | 410 | 3 | 55 | 43 |
| Nickel, Ni | mg/kg | 0.5 | 14 | 1.6 | 1.3 | 1.5 | 4.8 |
| Zinc, Zn | mg/kg | 2 | 2400 | 3600 | 29 | 2200 | 480 |

| PARAMETER | UOM | LOR | TP21 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.047 | TP22 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.048 | TP22 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.049 | TP23 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.050 | TP23 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.051 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | 110 | 2 | 1 | 3 | 1 |
| Cadmium, Cd | mg/kg | 0.3 | 0.6 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | 15 | 2.7 | 2.9 | 5.2 | 16 |
| Copper, Cu | mg/kg | 0.5 | 440 | 4.4 | 4.3 | 8.6 | 34 |
| Lead, Pb | mg/kg | 1 | 660 | 6 | 7 | 16 | 62 |
| Nickel, Ni | mg/kg | 0.5 | 3.9 | 2.1 | 1.7 | 3.3 | 1.4 |
| Zinc, Zn | mg/kg | 2 | 5800 | 96 | 95 | 340 | 920 |

| PARAMETER | UOM | LOR | TP23 0.5<br>SOIL<br>-<br>7/4/2020<br>SE204895.052 | QC1<br>SOIL<br>-<br>6/4/2020<br>SE204895.053 | QC2<br>SOIL<br>-<br>6/4/2020<br>SE204895.054 |
|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | <1 | 2 | 300 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | 3.4 |
| Chromium, Cr | mg/kg | 0.5 | 3.1 | 4.8 | 51 |
| Copper, Cu | mg/kg | 0.5 | 5.5 | 14 | 3200 |
| Lead, Pb | mg/kg | 1 | 11 | 8 | 6000 |
| Nickel, Ni | mg/kg | 0.5 | <0.5 | 5.1 | 12 |
| Zinc, Zn | mg/kg | 2 | 140 | 170 | 44000 |

## Mercury in Soil [AN312] Tested: 15/4/2020

| PARAMETER | UOM | LOR | BH1 1-1.1 SOIL - 6/4/2020 SE204895.001 | BH1 2-4.2.5 SOIL - 6/4/2020 SE204895.002 | BH2 1-1.45 SOIL - 6/4/2020 SE204895.003 | BH2 2-2.45 SOIL - 6/4/2020 SE204895.004 | TP1 0 SOIL - 6/4/2020 SE204895.005 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

| PARAMETER | UOM | LOR | TP1 1.6 SOIL - 6/4/2020 SE204895.006 | TP2 0 SOIL - 6/4/2020 SE204895.007 | TP2 0.7 SOIL - 6/4/2020 SE204895.008 | TP3 0 SOIL - 6/4/2020 SE204895.009 | TP3 0.55 SOIL - 6/4/2020 SE204895.010 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

| PARAMETER | UOM | LOR | TP4 0 SOIL - 6/4/2020 SE204895.011 | TP4 0.7 SOIL - 6/4/2020 SE204895.012 | TP5 0 SOIL - 6/4/2020 SE204895.013 | TP5 0.5 SOIL - 6/4/2020 SE204895.014 | TP6 1 SOIL - 6/4/2020 SE204895.015 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

| PARAMETER | UOM | LOR | TP7 0 SOIL - 6/4/2020 SE204895.016 | TP7 0.6 SOIL - 6/4/2020 SE204895.017 | TP8 0 SOIL - 6/4/2020 SE204895.018 | TP8 0.7 SOIL - 6/4/2020 SE204895.019 | TP9 0.3 SOIL - 6/4/2020 SE204895.020 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

| PARAMETER | UOM | LOR | TP9 0.5 SOIL - 6/4/2020 SE204895.021 | TP10 0 SOIL - 6/4/2020 SE204895.022 | TP10 0.6 SOIL - 6/4/2020 SE204895.023 | TP11 0 SOIL - 6/4/2020 SE204895.024 | TP10 0.3 SOIL - 6/4/2020 SE204895.025 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

| PARAMETER | UOM | LOR | TP11 0.2 SOIL - 6/4/2020 SE204895.026 | TP11 0.5 SOIL - 6/4/2020 SE204895.027 | TP12 0 SOIL - 6/4/2020 SE204895.028 | TP12 0.5 SOIL - 6/4/2020 SE204895.029 | TP12 0.7 SOIL - 6/4/2020 SE204895.030 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

| PARAMETER | UOM | LOR | TP13 0 SOIL - 6/4/2020 SE204895.031 | TP13 0.3 SOIL - 6/4/2020 SE204895.032 | TP13 0.5 SOIL - 6/4/2020 SE204895.033 | TP14 0.3 SOIL - 6/4/2020 SE204895.034 | TP14 0.5 SOIL - 6/4/2020 SE204895.035 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

## Mercury in Soil [AN312] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP15 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.036 | TP15 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.037 | TP16 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.038 | TP17 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.040 | TP18 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.041 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

| PARAMETER | UOM | LOR | TP19 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.042 | TP19 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.043 | TP20 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.044 | TP20 0.4<br>SOIL<br>-<br>6/4/2020<br>SE204895.045 | TP21 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.046 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

| PARAMETER | UOM | LOR | TP21 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.047 | TP22 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.048 | TP22 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.049 | TP23 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.050 | TP23 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.051 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

| PARAMETER | UOM | LOR | TP23 0.5<br>SOIL<br>-<br>7/4/2020<br>SE204895.052 | QC1<br>SOIL<br>-<br>6/4/2020<br>SE204895.053 | QC2<br>SOIL<br>-<br>6/4/2020<br>SE204895.054 |
|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 |

## Moisture Content [AN002] Tested: 15/4/2020

| PARAMETER | UOM | LOR | BH1 1-1.1 SOIL - 6/4/2020 SE204895.001 | BH1 2-4.2.5 SOIL - 6/4/2020 SE204895.002 | BH2 1-1.45 SOIL - 6/4/2020 SE204895.003 | BH2 2-2.45 SOIL - 6/4/2020 SE204895.004 | TP1 0 SOIL - 6/4/2020 SE204895.005 |
|---|---|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | 13.6 | 21.3 | 4.9 | 13.8 | 11.7 |

| PARAMETER | UOM | LOR | TP1 1.6 SOIL - 6/4/2020 SE204895.006 | TP2 0 SOIL - 6/4/2020 SE204895.007 | TP2 0.7 SOIL - 6/4/2020 SE204895.008 | TP3 0 SOIL - 6/4/2020 SE204895.009 | TP3 0.55 SOIL - 6/4/2020 SE204895.010 |
|---|---|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | 7.2 | 3.3 | 7.3 | 9.5 | 19.2 |

| PARAMETER | UOM | LOR | TP4 0 SOIL - 6/4/2020 SE204895.011 | TP4 0.7 SOIL - 6/4/2020 SE204895.012 | TP5 0 SOIL - 6/4/2020 SE204895.013 | TP5 0.5 SOIL - 6/4/2020 SE204895.014 | TP6 1 SOIL - 6/4/2020 SE204895.015 |
|---|---|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | 6.4 | 9.1 | 8.7 | 7.7 | 5.5 |

| PARAMETER | UOM | LOR | TP7 0 SOIL - 6/4/2020 SE204895.016 | TP7 0.6 SOIL - 6/4/2020 SE204895.017 | TP8 0 SOIL - 6/4/2020 SE204895.018 | TP8 0.7 SOIL - 6/4/2020 SE204895.019 | TP9 0.3 SOIL - 6/4/2020 SE204895.020 |
|---|---|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | 10.2 | 6.1 | 8.3 | 10.5 | 3.6 |

| PARAMETER | UOM | LOR | TP9 0.5 SOIL - 6/4/2020 SE204895.021 | TP10 0 SOIL - 6/4/2020 SE204895.022 | TP10 0.6 SOIL - 6/4/2020 SE204895.023 | TP11 0 SOIL - 6/4/2020 SE204895.024 | TP10 0.3 SOIL - 6/4/2020 SE204895.025 |
|---|---|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | 6.2 | 7.2 | 8.3 | 3.4 | 8.0 |

| PARAMETER | UOM | LOR | TP11 0.2 SOIL - 6/4/2020 SE204895.026 | TP11 0.5 SOIL - 6/4/2020 SE204895.027 | TP12 0 SOIL - 6/4/2020 SE204895.028 | TP12 0.5 SOIL - 6/4/2020 SE204895.029 | TP12 0.7 SOIL - 6/4/2020 SE204895.030 |
|---|---|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | 4.8 | 3.3 | 5.1 | 6.0 | 3.9 |

| PARAMETER | UOM | LOR | TP13 0 SOIL - 6/4/2020 SE204895.031 | TP13 0.3 SOIL - 6/4/2020 SE204895.032 | TP13 0.5 SOIL - 6/4/2020 SE204895.033 | TP14 0.3 SOIL - 6/4/2020 SE204895.034 | TP14 0.5 SOIL - 6/4/2020 SE204895.035 |
|---|---|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | 7.5 | 6.3 | 6.8 | 8.8 | 6.2 |

## Moisture Content [AN002] Tested: 15/4/2020 (continued)

| PARAMETER | UOM | LOR | TP15 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.036 | TP15 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.037 | TP16 0.5<br>SOIL<br>-<br>6/4/2020<br>SE204895.038 | TP17 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.039 | TP17 0.3<br>SOIL<br>-<br>6/4/2020<br>SE204895.040 |
|---|---|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | 9.7 | 9.3 | 45.5 | 8.4 | 10.5 |

| PARAMETER | UOM | LOR | TP18 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.041 | TP19 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.042 | TP19 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.043 | TP20 0<br>SOIL<br>-<br>6/4/2020<br>SE204895.044 | TP20 0.4<br>SOIL<br>-<br>6/4/2020<br>SE204895.045 |
|---|---|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | 15.3 | 9.2 | 9.2 | 18.4 | 15.2 |

| PARAMETER | UOM | LOR | TP21 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.046 | TP21 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.047 | TP22 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.048 | TP22 1<br>SOIL<br>-<br>7/4/2020<br>SE204895.049 | TP23 0<br>SOIL<br>-<br>7/4/2020<br>SE204895.050 |
|---|---|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | 4.7 | 7.8 | 6.3 | 4.6 | 15.7 |

| PARAMETER | UOM | LOR | TP23 0.4<br>SOIL<br>-<br>7/4/2020<br>SE204895.051 | TP23 0.5<br>SOIL<br>-<br>7/4/2020<br>SE204895.052 | QC1<br>SOIL<br>-<br>6/4/2020<br>SE204895.053 | QC2<br>SOIL<br>-<br>6/4/2020<br>SE204895.054 | Trip Blank<br>SOIL<br>-<br>6/4/2020<br>SE204895.055 |
|---|---|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | 8.3 | 6.1 | 19.8 | 8.7 | <1.0 |

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 15/4/2020

| PARAMETER | UOM | LOR | QCA WATER - 6/4/2020 SE204895.057 |
|---|---|---|---|
| Arsenic, As | µg/L | 1 | <1 |
| Cadmium, Cd | µg/L | 0.1 | <0.1 |
| Copper, Cu | µg/L | 1 | <1 |
| Chromium, Cr | µg/L | 1 | <1 |
| Nickel, Ni | µg/L | 1 | <1 |
| Lead, Pb | µg/L | 1 | <1 |
| Zinc, Zn | µg/L | 5 | **43** |

## Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 16/4/2020

| PARAMETER | UOM | LOR | QCA WATER - 6/4/2020 SE204895.057 |
|---|---|---|---|
| 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 ASS or ICP as per USEPA Method 200.8. |
| AN101 | pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode and is calibrated against 3 buffers purchased commercially. For soils, sediments and sludges, an extract with water (or 0.01M CaCl2) is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+. |
| AN122 | Exchangeable Cations, CEC and ESP: Soil sample is extracted in 1M Ammonium Acetate at pH=7 (or 1M Ammonium Chloride at pH=7) with cations (Na, K, Ca & Mg) then determined by ICP OES/ICP MS and reported as Exchangeable Cations. For saline soils, these results can be corrected for water soluble cations and reported as Exchangeable cations in meq/100g or soil can be pre-treated (aqueous ethanol/aqueous glycerol) prior to extraction. Cation Exchange Capacity (CEC) is the sum of the exchangeable cations in meq/100g. |
| AN122 | The Exchangeable Sodium Percentage (ESP) is calculated as the exchangeable sodium divided by the CEC (all in meq/100g) times 100.<br>ESP can be used to categorise the sodicity of the soil as below:<br>ESP < 6% non-sodic<br>ESP 6-15% sodic<br>ESP >15% strongly sodic<br>Method is referenced to Rayment and Lyons, 2011, sections 15D3 and 15N1.- |
| 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). |
| 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. |

FOOTNOTES

| | | | | | |
|---|---|---|---|---|---|
| * | NATA accreditation does not cover the performance of this service. | - | Not analysed. | UOM | Unit of Measure. |
| | | NVL | Not validated. | LOR | Limit of Reporting. |
| ** | Indicative data, theoretical holding time exceeded. | 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.

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# STATEMENT OF QA/QC PERFORMANCE

**SE204895 R1**

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME2020** |
| Order Number | **JME2020** |
| Samples | 57 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE204895 R1** |
| Date Received | 08 Apr 2020 |
| Date Reported | 21 Apr 2020 |

## COMMENTS

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

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

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

| | | |
|---|---|---|
| Extraction Date | pH in soil (1:5) | 8 items |
| Surrogate | PAH (Polynuclear Aromatic Hydrocarbons) in Soil | 1 item |
| Duplicate | Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES | 5 items |
| | Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES | 5 items |
| | Volatile Petroleum Hydrocarbons in Soil | 4 items |
| Matrix Spike | Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES | 1 item |
| | Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES | 3 items |
| | VOC's in Soil | 1 item |

## SAMPLE SUMMARY

| | | | |
|---|---|---|---|
| Samples clearly labelled | Yes | Complete documentation received | Yes |
| Sample container provider | SGS | Sample cooling method | Ice |
| Samples received in correct containers | Yes | Sample counts by matrix | 56 Soil, 1 Water |
| Date documentation received | 8/4/2020 | Type of documentation received | COC |
| Samples received in good order | Yes | Samples received without headspace | Yes |
| Sample temperature upon receipt | 16°C | Sufficient sample for analysis | Yes |
| Turnaround time requested | Standard | | |

# HOLDING TIME SUMMARY

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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.

## Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| BH1 1-1.1 | SE204895.001 | LB197299 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP8 0 | SE204895.018 | LB197299 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP11 0 | SE204895.024 | LB197299 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP14 0.3 | SE204895.034 | LB197299 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP17 0 | SE204895.039 | LB197299 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP19 0 | SE204895.042 | LB197299 | 07 Apr 2020 | 08 Apr 2020 | 05 May 2020 | 15 Apr 2020 | 05 May 2020 | 17 Apr 2020 |
| TP22 0 | SE204895.048 | LB197299 | 07 Apr 2020 | 08 Apr 2020 | 05 May 2020 | 15 Apr 2020 | 05 May 2020 | 17 Apr 2020 |
| TP22 1 | SE204895.049 | LB197299 | 07 Apr 2020 | 08 Apr 2020 | 05 May 2020 | 15 Apr 2020 | 05 May 2020 | 17 Apr 2020 |

## 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 |
|---|---|---|---|---|---|---|---|---|
| QCA | SE204895.057 | LB197375 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 16 Apr 2020 | 04 May 2020 | 16 Apr 2020 |

## Mercury in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| BH1 1-1.1 | SE204895.001 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| BH1 2-4.2.5 | SE204895.002 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| BH2 1-1.45 | SE204895.003 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| BH2 2-2.45 | SE204895.004 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP1 0 | SE204895.005 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP1 1.6 | SE204895.006 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP2 0 | SE204895.007 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP2 0.7 | SE204895.008 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP3 0 | SE204895.009 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP3 0.55 | SE204895.010 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP4 0 | SE204895.011 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP4 0.7 | SE204895.012 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP5 0 | SE204895.013 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP5 0.5 | SE204895.014 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP6 1 | SE204895.015 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP7 0 | SE204895.016 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP7 0.6 | SE204895.017 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP8 0 | SE204895.018 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP8 0.7 | SE204895.019 | LB197290 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP9 0.3 | SE204895.020 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP9 0.5 | SE204895.021 | LB197726 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 21 Apr 2020 | 04 May 2020 | 21 Apr 2020 |
| TP10 0 | SE204895.022 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP10 0.6 | SE204895.023 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP11 0 | SE204895.024 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP10 0.3 | SE204895.025 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP11 0.2 | SE204895.026 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP11 0.5 | SE204895.027 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP12 0 | SE204895.028 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP12 0.5 | SE204895.029 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP12 0.7 | SE204895.030 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP13 0 | SE204895.031 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP13 0.3 | SE204895.032 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP13 0.5 | SE204895.033 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP14 0.3 | SE204895.034 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP14 0.5 | SE204895.035 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP15 0 | SE204895.036 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP15 0.5 | SE204895.037 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP16 0.5 | SE204895.038 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP17 0.3 | SE204895.040 | LB197291 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 17 Apr 2020 |
| TP18 0 | SE204895.041 | LB197292 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 16 Apr 2020 |
| TP19 0 | SE204895.042 | LB197292 | 07 Apr 2020 | 08 Apr 2020 | 05 May 2020 | 15 Apr 2020 | 05 May 2020 | 16 Apr 2020 |
| TP19 0.4 | SE204895.043 | LB197292 | 07 Apr 2020 | 08 Apr 2020 | 05 May 2020 | 15 Apr 2020 | 05 May 2020 | 16 Apr 2020 |
| TP20 0 | SE204895.044 | LB197292 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 16 Apr 2020 |
| TP20 0.4 | SE204895.045 | LB197292 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 16 Apr 2020 |
| TP21 0 | SE204895.046 | LB197292 | 07 Apr 2020 | 08 Apr 2020 | 05 May 2020 | 15 Apr 2020 | 05 May 2020 | 16 Apr 2020 |

# HOLDING TIME SUMMARY

SE204895 R1

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 in Soil (continued)

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| TP21 1 | SE204895.047 | LB197292 | 07 Apr 2020 | 08 Apr 2020 | 05 May 2020 | 15 Apr 2020 | 05 May 2020 | 16 Apr 2020 |
| TP22 0 | SE204895.048 | LB197292 | 07 Apr 2020 | 08 Apr 2020 | 05 May 2020 | 15 Apr 2020 | 05 May 2020 | 16 Apr 2020 |
| TP22 1 | SE204895.049 | LB197292 | 07 Apr 2020 | 08 Apr 2020 | 05 May 2020 | 15 Apr 2020 | 05 May 2020 | 16 Apr 2020 |
| TP23 0 | SE204895.050 | LB197292 | 07 Apr 2020 | 08 Apr 2020 | 05 May 2020 | 15 Apr 2020 | 05 May 2020 | 16 Apr 2020 |
| TP23 0.4 | SE204895.051 | LB197292 | 07 Apr 2020 | 08 Apr 2020 | 05 May 2020 | 15 Apr 2020 | 05 May 2020 | 16 Apr 2020 |
| TP23 0.5 | SE204895.052 | LB197292 | 07 Apr 2020 | 08 Apr 2020 | 05 May 2020 | 15 Apr 2020 | 05 May 2020 | 16 Apr 2020 |
| QC1 | SE204895.053 | LB197292 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 16 Apr 2020 |
| QC2 | SE204895.054 | LB197292 | 06 Apr 2020 | 08 Apr 2020 | 04 May 2020 | 15 Apr 2020 | 04 May 2020 | 16 Apr 2020 |

## Moisture Content

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| BH1 1-1.1 | SE204895.001 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| BH1 2-4.2.5 | SE204895.002 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| BH2 1-1.45 | SE204895.003 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| BH2 2-2.45 | SE204895.004 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP1 0 | SE204895.005 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP1 1.6 | SE204895.006 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP2 0 | SE204895.007 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP2 0.7 | SE204895.008 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP3 0 | SE204895.009 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP3 0.55 | SE204895.010 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP4 0 | SE204895.011 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP4 0.7 | SE204895.012 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP5 0 | SE204895.013 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP5 0.5 | SE204895.014 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP6 1 | SE204895.015 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP7 0 | SE204895.016 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP7 0.6 | SE204895.017 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP8 0 | SE204895.018 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP8 0.7 | SE204895.019 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP9 0.3 | SE204895.020 | LB197269 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP9 0.5 | SE204895.021 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP10 0 | SE204895.022 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP10 0.6 | SE204895.023 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP11 0 | SE204895.024 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP10 0.3 | SE204895.025 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP11 0.2 | SE204895.026 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP11 0.5 | SE204895.027 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP12 0 | SE204895.028 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP12 0.5 | SE204895.029 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP12 0.7 | SE204895.030 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP13 0 | SE204895.031 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP13 0.3 | SE204895.032 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP13 0.5 | SE204895.033 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP14 0.3 | SE204895.034 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP14 0.5 | SE204895.035 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP15 0 | SE204895.036 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP15 0.5 | SE204895.037 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP16 0.5 | SE204895.038 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP17 0 | SE204895.039 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP17 0.3 | SE204895.040 | LB197270 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP18 0 | SE204895.041 | LB197271 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP19 0 | SE204895.042 | LB197271 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP19 0.4 | SE204895.043 | LB197271 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP20 0 | SE204895.044 | LB197271 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP20 0.4 | SE204895.045 | LB197271 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP21 0 | SE204895.046 | LB197271 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP21 1 | SE204895.047 | LB197271 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP22 0 | SE204895.048 | LB197271 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP22 1 | SE204895.049 | LB197271 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |

# HOLDING TIME SUMMARY

SE204895 R1

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)-[ENV]AN002

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| TP23 0 | SE204895.050 | LB197271 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP23 0.4 | SE204895.051 | LB197271 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| TP23 0.5 | SE204895.052 | LB197271 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| QC1 | SE204895.053 | LB197271 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| QC2 | SE204895.054 | LB197271 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |
| Trip Blank | SE204895.055 | LB197271 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 20 Apr 2020 | 16 Apr 2020 |

## OC Pesticides in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| BH1 1-1.1 | SE204895.001 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| BH1 2-4.2.5 | SE204895.002 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| BH2 1-1.45 | SE204895.003 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| BH2 2-2.45 | SE204895.004 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP1 0 | SE204895.005 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP1 1.6 | SE204895.006 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP2 0 | SE204895.007 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP2 0.7 | SE204895.008 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP3 0 | SE204895.009 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP3 0.55 | SE204895.010 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP4 0 | SE204895.011 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP4 0.7 | SE204895.012 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP5 0 | SE204895.013 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP5 0.5 | SE204895.014 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP6 1 | SE204895.015 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP7 0 | SE204895.016 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP7 0.6 | SE204895.017 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP8 0 | SE204895.018 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP8 0.7 | SE204895.019 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP9 0.3 | SE204895.020 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP9 0.5 | SE204895.021 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP10 0 | SE204895.022 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP10 0.6 | SE204895.023 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP11 0 | SE204895.024 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP10 0.3 | SE204895.025 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP11 0.2 | SE204895.026 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP11 0.5 | SE204895.027 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP12 0 | SE204895.028 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP12 0.5 | SE204895.029 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP12 0.7 | SE204895.030 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP13 0 | SE204895.031 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP13 0.3 | SE204895.032 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP13 0.5 | SE204895.033 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP14 0.3 | SE204895.034 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP14 0.5 | SE204895.035 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP15 0 | SE204895.036 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP15 0.5 | SE204895.037 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP16 0.5 | SE204895.038 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP17 0.3 | SE204895.040 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP18 0 | SE204895.041 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP19 0 | SE204895.042 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP19 0.4 | SE204895.043 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP20 0 | SE204895.044 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP20 0.4 | SE204895.045 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP21 0 | SE204895.046 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP21 1 | SE204895.047 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP22 0 | SE204895.048 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP22 1 | SE204895.049 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP23 0 | SE204895.050 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP23 0.4 | SE204895.051 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP23 0.5 | SE204895.052 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |

# HOLDING TIME SUMMARY

SE204895 R1

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.

## OC Pesticides in Soil (continued)

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| QC1 | SE204895.053 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| QC2 | SE204895.054 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |

## OP Pesticides in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| BH1 1-1.1 | SE204895.001 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH1 2-4.2.5 | SE204895.002 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH2 1-1.45 | SE204895.003 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH2 2-2.45 | SE204895.004 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP1 0 | SE204895.005 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP1 1.6 | SE204895.006 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP2 0 | SE204895.007 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP2 0.7 | SE204895.008 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP3 0 | SE204895.009 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP3 0.55 | SE204895.010 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP4 0 | SE204895.011 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP4 0.7 | SE204895.012 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP5 0 | SE204895.013 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP5 0.5 | SE204895.014 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP6 1 | SE204895.015 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP7 0 | SE204895.016 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP7 0.6 | SE204895.017 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP8 0 | SE204895.018 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP8 0.7 | SE204895.019 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP9 0.3 | SE204895.020 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP9 0.5 | SE204895.021 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0 | SE204895.022 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0.6 | SE204895.023 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0 | SE204895.024 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0.3 | SE204895.025 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0.2 | SE204895.026 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0.5 | SE204895.027 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0 | SE204895.028 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0.5 | SE204895.029 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0.7 | SE204895.030 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0 | SE204895.031 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0.3 | SE204895.032 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0.5 | SE204895.033 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP14 0.3 | SE204895.034 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP14 0.5 | SE204895.035 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP15 0 | SE204895.036 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP15 0.5 | SE204895.037 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP16 0.5 | SE204895.038 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP17 0.3 | SE204895.040 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP18 0 | SE204895.041 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP19 0 | SE204895.042 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP19 0.4 | SE204895.043 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP20 0 | SE204895.044 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP20 0.4 | SE204895.045 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP21 0 | SE204895.046 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP21 1 | SE204895.047 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP22 0 | SE204895.048 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP22 1 | SE204895.049 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP23 0 | SE204895.050 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP23 0.4 | SE204895.051 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP23 0.5 | SE204895.052 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| QC1 | SE204895.053 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| QC2 | SE204895.054 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Sample Name | Sample No. | QC Ref |
|---|---|---|

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)-[ENV]AN420

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| BH1 1-1.1 | SE204895.001 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH1 2-4.2.5 | SE204895.002 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH2 1-1.45 | SE204895.003 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH2 2-2.45 | SE204895.004 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP1 0 | SE204895.005 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP1 1.6 | SE204895.006 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP2 0 | SE204895.007 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP2 0.7 | SE204895.008 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP3 0 | SE204895.009 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP3 0.55 | SE204895.010 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP4 0 | SE204895.011 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP4 0.7 | SE204895.012 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP5 0 | SE204895.013 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP5 0.5 | SE204895.014 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP6 1 | SE204895.015 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP7 0 | SE204895.016 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP7 0.6 | SE204895.017 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP8 0 | SE204895.018 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP8 0.7 | SE204895.019 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP9 0.3 | SE204895.020 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP9 0.5 | SE204895.021 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0 | SE204895.022 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0.6 | SE204895.023 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0 | SE204895.024 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0.3 | SE204895.025 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0.2 | SE204895.026 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0.5 | SE204895.027 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0 | SE204895.028 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0.5 | SE204895.029 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0.7 | SE204895.030 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0 | SE204895.031 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0.3 | SE204895.032 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0.5 | SE204895.033 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP14 0.3 | SE204895.034 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP14 0.5 | SE204895.035 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP15 0 | SE204895.036 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP15 0.5 | SE204895.037 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP16 0.5 | SE204895.038 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP17 0.3 | SE204895.040 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP18 0 | SE204895.041 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP19 0 | SE204895.042 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP19 0.4 | SE204895.043 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP20 0 | SE204895.044 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP20 0.4 | SE204895.045 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP21 0 | SE204895.046 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP21 1 | SE204895.047 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP22 0 | SE204895.048 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP22 1 | SE204895.049 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP23 0 | SE204895.050 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP23 0.4 | SE204895.051 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP23 0.5 | SE204895.052 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| QC1 | SE204895.053 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| QC2 | SE204895.054 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |

## PCBs in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| BH1 1-1.1 | SE204895.001 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| BH1 2-4.2.5 | SE204895.002 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| BH2 1-1.45 | SE204895.003 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| BH2 2-2.45 | SE204895.004 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |

# HOLDING TIME SUMMARY

SE204895 R1

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 |
|---|---|---|---|---|---|---|---|---|
| TP1 0 | SE204895.005 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP1 1.6 | SE204895.006 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP2 0 | SE204895.007 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP2 0.7 | SE204895.008 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP3 0 | SE204895.009 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP3 0.55 | SE204895.010 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP4 0 | SE204895.011 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP4 0.7 | SE204895.012 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP5 0 | SE204895.013 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP5 0.5 | SE204895.014 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP6 1 | SE204895.015 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP7 0 | SE204895.016 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP7 0.6 | SE204895.017 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP8 0 | SE204895.018 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP8 0.7 | SE204895.019 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP9 0.3 | SE204895.020 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP9 0.5 | SE204895.021 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP10 0 | SE204895.022 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP10 0.6 | SE204895.023 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP11 0 | SE204895.024 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP10 0.3 | SE204895.025 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP11 0.2 | SE204895.026 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP11 0.5 | SE204895.027 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP12 0 | SE204895.028 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP12 0.5 | SE204895.029 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP12 0.7 | SE204895.030 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP13 0 | SE204895.031 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP13 0.3 | SE204895.032 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP13 0.5 | SE204895.033 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP14 0.3 | SE204895.034 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP14 0.5 | SE204895.035 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP15 0 | SE204895.036 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP15 0.5 | SE204895.037 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP16 0.5 | SE204895.038 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP17 0.3 | SE204895.040 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP18 0 | SE204895.041 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP19 0 | SE204895.042 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP19 0.4 | SE204895.043 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP20 0 | SE204895.044 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP20 0.4 | SE204895.045 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP21 0 | SE204895.046 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP21 1 | SE204895.047 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP22 0 | SE204895.048 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP22 1 | SE204895.049 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP23 0 | SE204895.050 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP23 0.4 | SE204895.051 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP23 0.5 | SE204895.052 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| QC1 | SE204895.053 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| QC2 | SE204895.054 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |

## pH in soil (1:5)

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| BH1 1-1.1 | SE204895.001 | LB197395 | 06 Apr 2020 | 08 Apr 2020 | 13 Apr 2020 | 16 Apr 2020† | 17 Apr 2020 | 16 Apr 2020 |
| TP8 0 | SE204895.018 | LB197395 | 06 Apr 2020 | 08 Apr 2020 | 13 Apr 2020 | 16 Apr 2020† | 17 Apr 2020 | 16 Apr 2020 |
| TP11 0 | SE204895.024 | LB197395 | 06 Apr 2020 | 08 Apr 2020 | 13 Apr 2020 | 16 Apr 2020† | 17 Apr 2020 | 16 Apr 2020 |
| TP14 0.3 | SE204895.034 | LB197395 | 06 Apr 2020 | 08 Apr 2020 | 13 Apr 2020 | 16 Apr 2020† | 17 Apr 2020 | 16 Apr 2020 |
| TP17 0 | SE204895.039 | LB197395 | 06 Apr 2020 | 08 Apr 2020 | 13 Apr 2020 | 16 Apr 2020† | 17 Apr 2020 | 16 Apr 2020 |
| TP19 0 | SE204895.042 | LB197395 | 07 Apr 2020 | 08 Apr 2020 | 14 Apr 2020 | 16 Apr 2020† | 17 Apr 2020 | 16 Apr 2020 |
| TP22 0 | SE204895.048 | LB197395 | 07 Apr 2020 | 08 Apr 2020 | 14 Apr 2020 | 16 Apr 2020† | 17 Apr 2020 | 16 Apr 2020 |
| TP22 1 | SE204895.049 | LB197395 | 07 Apr 2020 | 08 Apr 2020 | 14 Apr 2020 | 16 Apr 2020† | 17 Apr 2020 | 16 Apr 2020 |

# HOLDING TIME SUMMARY

SE204895 R1

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.

## Speciated Phenols in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| BH1 1-1.1 | SE204895.001 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH1 2-4.2.5 | SE204895.002 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH2 1-1.45 | SE204895.003 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH2 2-2.45 | SE204895.004 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP1 0 | SE204895.005 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP1 1.6 | SE204895.006 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP2 0 | SE204895.007 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP2 0.7 | SE204895.008 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP3 0 | SE204895.009 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP3 0.55 | SE204895.010 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP4 0 | SE204895.011 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP4 0.7 | SE204895.012 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP5 0 | SE204895.013 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP5 0.5 | SE204895.014 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP6 1 | SE204895.015 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP7 0 | SE204895.016 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP7 0.6 | SE204895.017 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP8 0 | SE204895.018 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP8 0.7 | SE204895.019 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP9 0.3 | SE204895.020 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP9 0.5 | SE204895.021 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0 | SE204895.022 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0.6 | SE204895.023 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0 | SE204895.024 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0.3 | SE204895.025 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0.2 | SE204895.026 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0.5 | SE204895.027 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0 | SE204895.028 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0.5 | SE204895.029 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0.7 | SE204895.030 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0 | SE204895.031 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0.3 | SE204895.032 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0.5 | SE204895.033 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP14 0.3 | SE204895.034 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP14 0.5 | SE204895.035 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP15 0 | SE204895.036 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP15 0.5 | SE204895.037 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP16 0.5 | SE204895.038 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP17 0.3 | SE204895.040 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP18 0 | SE204895.041 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP19 0 | SE204895.042 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP19 0.4 | SE204895.043 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP20 0 | SE204895.044 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP20 0.4 | SE204895.045 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP21 0 | SE204895.046 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP21 1 | SE204895.047 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP22 0 | SE204895.048 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP22 1 | SE204895.049 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP23 0 | SE204895.050 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP23 0.4 | SE204895.051 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP23 0.5 | SE204895.052 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| QC1 | SE204895.053 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| QC2 | SE204895.054 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |

## 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 1-1.1 | SE204895.001 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| BH1 2-4.2.5 | SE204895.002 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| BH2 1-1.45 | SE204895.003 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| BH2 2-2.45 | SE204895.004 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |

# HOLDING TIME SUMMARY

SE204895 R1

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.

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

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| TP1 0 | SE204895.005 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP1 1.6 | SE204895.006 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP2 0 | SE204895.007 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP2 0.7 | SE204895.008 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP3 0 | SE204895.009 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP3 0.55 | SE204895.010 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP4 0 | SE204895.011 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP4 0.7 | SE204895.012 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP5 0 | SE204895.013 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP5 0.5 | SE204895.014 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP6 1 | SE204895.015 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP7 0 | SE204895.016 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP7 0.6 | SE204895.017 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP8 0 | SE204895.018 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP8 0.7 | SE204895.019 | LB197287 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP9 0.3 | SE204895.020 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP9 0.5 | SE204895.021 | LB197722 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 21 Apr 2020 | 03 Oct 2020 | 21 Apr 2020 |
| TP10 0 | SE204895.022 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP10 0.6 | SE204895.023 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP11 0 | SE204895.024 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP10 0.3 | SE204895.025 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP11 0.2 | SE204895.026 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP11 0.5 | SE204895.027 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP12 0 | SE204895.028 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP12 0.5 | SE204895.029 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP12 0.7 | SE204895.030 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP13 0 | SE204895.031 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP13 0.3 | SE204895.032 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP13 0.5 | SE204895.033 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP14 0.3 | SE204895.034 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP14 0.5 | SE204895.035 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP15 0 | SE204895.036 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP15 0.5 | SE204895.037 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP16 0.5 | SE204895.038 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP17 0.3 | SE204895.040 | LB197288 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP18 0 | SE204895.041 | LB197289 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP19 0 | SE204895.042 | LB197289 | 07 Apr 2020 | 08 Apr 2020 | 04 Oct 2020 | 15 Apr 2020 | 04 Oct 2020 | 16 Apr 2020 |
| TP19 0.4 | SE204895.043 | LB197289 | 07 Apr 2020 | 08 Apr 2020 | 04 Oct 2020 | 15 Apr 2020 | 04 Oct 2020 | 16 Apr 2020 |
| TP20 0 | SE204895.044 | LB197289 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP20 0.4 | SE204895.045 | LB197289 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| TP21 0 | SE204895.046 | LB197289 | 07 Apr 2020 | 08 Apr 2020 | 04 Oct 2020 | 15 Apr 2020 | 04 Oct 2020 | 16 Apr 2020 |
| TP21 1 | SE204895.047 | LB197289 | 07 Apr 2020 | 08 Apr 2020 | 04 Oct 2020 | 15 Apr 2020 | 04 Oct 2020 | 16 Apr 2020 |
| TP22 0 | SE204895.048 | LB197289 | 07 Apr 2020 | 08 Apr 2020 | 04 Oct 2020 | 15 Apr 2020 | 04 Oct 2020 | 16 Apr 2020 |
| TP22 1 | SE204895.049 | LB197289 | 07 Apr 2020 | 08 Apr 2020 | 04 Oct 2020 | 15 Apr 2020 | 04 Oct 2020 | 16 Apr 2020 |
| TP23 0 | SE204895.050 | LB197289 | 07 Apr 2020 | 08 Apr 2020 | 04 Oct 2020 | 15 Apr 2020 | 04 Oct 2020 | 16 Apr 2020 |
| TP23 0.4 | SE204895.051 | LB197289 | 07 Apr 2020 | 08 Apr 2020 | 04 Oct 2020 | 15 Apr 2020 | 04 Oct 2020 | 16 Apr 2020 |
| TP23 0.5 | SE204895.052 | LB197289 | 07 Apr 2020 | 08 Apr 2020 | 04 Oct 2020 | 15 Apr 2020 | 04 Oct 2020 | 16 Apr 2020 |
| QC1 | SE204895.053 | LB197289 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |
| QC2 | SE204895.054 | LB197289 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |

## 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 |
|---|---|---|---|---|---|---|---|---|
| QCA | SE204895.057 | LB197279 | 06 Apr 2020 | 08 Apr 2020 | 03 Oct 2020 | 15 Apr 2020 | 03 Oct 2020 | 16 Apr 2020 |

## TRH (Total Recoverable Hydrocarbons) in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| BH1 1-1.1 | SE204895.001 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH1 2-4.2.5 | SE204895.002 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH2 1-1.45 | SE204895.003 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH2 2-2.45 | SE204895.004 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |

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.

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

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| TP1 0 | SE204895.005 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP1 1.6 | SE204895.006 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP2 0 | SE204895.007 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP2 0.7 | SE204895.008 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP3 0 | SE204895.009 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP3 0.55 | SE204895.010 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP4 0 | SE204895.011 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP4 0.7 | SE204895.012 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP5 0 | SE204895.013 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP5 0.5 | SE204895.014 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP6 1 | SE204895.015 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP7 0 | SE204895.016 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP7 0.6 | SE204895.017 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP8 0 | SE204895.018 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP8 0.7 | SE204895.019 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP9 0.3 | SE204895.020 | LB197266 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP9 0.5 | SE204895.021 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0 | SE204895.022 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0.6 | SE204895.023 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0 | SE204895.024 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0.3 | SE204895.025 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0.2 | SE204895.026 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0.5 | SE204895.027 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0 | SE204895.028 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0.5 | SE204895.029 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0.7 | SE204895.030 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0 | SE204895.031 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0.3 | SE204895.032 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0.5 | SE204895.033 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP14 0.3 | SE204895.034 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP14 0.5 | SE204895.035 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP15 0 | SE204895.036 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP15 0.5 | SE204895.037 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP16 0.5 | SE204895.038 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP17 0.3 | SE204895.040 | LB197267 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP18 0 | SE204895.041 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP19 0 | SE204895.042 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP19 0.4 | SE204895.043 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP20 0 | SE204895.044 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP20 0.4 | SE204895.045 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP21 0 | SE204895.046 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP21 1 | SE204895.047 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP22 0 | SE204895.048 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP22 1 | SE204895.049 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP23 0 | SE204895.050 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP23 0.4 | SE204895.051 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP23 0.5 | SE204895.052 | LB197268 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| QC1 | SE204895.053 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| QC2 | SE204895.054 | LB197268 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |

## VOC's in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| BH1 1-1.1 | SE204895.001 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH1 2-4.2.5 | SE204895.002 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH2 1-1.45 | SE204895.003 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH2 2-2.45 | SE204895.004 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP1 0 | SE204895.005 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP1 1.6 | SE204895.006 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP2 0 | SE204895.007 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP2 0.7 | SE204895.008 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |

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)-[ENV]AN433

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| TP3 0 | SE204895.009 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP3 0.55 | SE204895.010 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP4 0 | SE204895.011 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP4 0.7 | SE204895.012 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP5 0 | SE204895.013 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP5 0.5 | SE204895.014 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP6 1 | SE204895.015 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP7 0 | SE204895.016 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP7 0.6 | SE204895.017 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP8 0 | SE204895.018 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP8 0.7 | SE204895.019 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP9 0.3 | SE204895.020 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP9 0.5 | SE204895.021 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0 | SE204895.022 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0.6 | SE204895.023 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0 | SE204895.024 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0.3 | SE204895.025 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0.2 | SE204895.026 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0.5 | SE204895.027 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0 | SE204895.028 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0.5 | SE204895.029 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0.7 | SE204895.030 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0 | SE204895.031 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0.3 | SE204895.032 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0.5 | SE204895.033 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP14 0.3 | SE204895.034 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP14 0.5 | SE204895.035 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP15 0 | SE204895.036 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP15 0.5 | SE204895.037 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP16 0.5 | SE204895.038 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP17 0.3 | SE204895.040 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP18 0 | SE204895.041 | LB197265 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP19 0 | SE204895.042 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP19 0.4 | SE204895.043 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP20 0 | SE204895.044 | LB197265 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP20 0.4 | SE204895.045 | LB197265 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP21 0 | SE204895.046 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP21 1 | SE204895.047 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP22 0 | SE204895.048 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP22 1 | SE204895.049 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP23 0 | SE204895.050 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP23 0.4 | SE204895.051 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP23 0.5 | SE204895.052 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| QC1 | SE204895.053 | LB197265 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| QC2 | SE204895.054 | LB197265 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| Trip Blank | SE204895.055 | LB197265 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| Trip Spike | SE204895.056 | LB197265 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |

## Volatile Petroleum Hydrocarbons in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| BH1 1-1.1 | SE204895.001 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH1 2-4.2.5 | SE204895.002 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH2 1-1.45 | SE204895.003 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| BH2 2-2.45 | SE204895.004 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP1 0 | SE204895.005 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP1 1.6 | SE204895.006 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP2 0 | SE204895.007 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP2 0.7 | SE204895.008 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP3 0 | SE204895.009 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP3 0.55 | SE204895.010 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |

# HOLDING TIME SUMMARY

SE204895 R1

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)-[ENV]AN433**

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| TP4 0 | SE204895.011 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP4 0.7 | SE204895.012 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP5 0 | SE204895.013 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP5 0.5 | SE204895.014 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP6 1 | SE204895.015 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP7 0 | SE204895.016 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP7 0.6 | SE204895.017 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP8 0 | SE204895.018 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP8 0.7 | SE204895.019 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP9 0.3 | SE204895.020 | LB197263 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP9 0.5 | SE204895.021 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0 | SE204895.022 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0.6 | SE204895.023 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0 | SE204895.024 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP10 0.3 | SE204895.025 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0.2 | SE204895.026 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP11 0.5 | SE204895.027 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0 | SE204895.028 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0.5 | SE204895.029 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP12 0.7 | SE204895.030 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0 | SE204895.031 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0.3 | SE204895.032 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP13 0.5 | SE204895.033 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP14 0.3 | SE204895.034 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP14 0.5 | SE204895.035 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP15 0 | SE204895.036 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP15 0.5 | SE204895.037 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP16 0.5 | SE204895.038 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP17 0.3 | SE204895.040 | LB197264 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 17 Apr 2020 |
| TP18 0 | SE204895.041 | LB197265 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP19 0 | SE204895.042 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP19 0.4 | SE204895.043 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP20 0 | SE204895.044 | LB197265 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP20 0.4 | SE204895.045 | LB197265 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP21 0 | SE204895.046 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP21 1 | SE204895.047 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP22 0 | SE204895.048 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP22 1 | SE204895.049 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP23 0 | SE204895.050 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP23 0.4 | SE204895.051 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| TP23 0.5 | SE204895.052 | LB197265 | 07 Apr 2020 | 08 Apr 2020 | 21 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| QC1 | SE204895.053 | LB197265 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| QC2 | SE204895.054 | LB197265 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| Trip Blank | SE204895.055 | LB197265 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |
| Trip Spike | SE204895.056 | LB197265 | 06 Apr 2020 | 08 Apr 2020 | 20 Apr 2020 | 15 Apr 2020 | 25 May 2020 | 16 Apr 2020 |

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

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

## OC Pesticides in Soil

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Tetrachloro-m-xylene (TCMX) (Surrogate) | TP2 0.7 | SE204895.008 | % | 60 - 130% | 106 |
| | TP3 0.55 | SE204895.010 | % | 60 - 130% | 103 |
| | TP7 0 | SE204895.016 | % | 60 - 130% | 123 |
| | TP7 0.6 | SE204895.017 | % | 60 - 130% | 96 |
| | TP9 0.3 | SE204895.020 | % | 60 - 130% | 115 |
| | TP10 0.6 | SE204895.023 | % | 60 - 130% | 99 |
| | TP10 0.3 | SE204895.025 | % | 60 - 130% | 112 |
| | TP11 0.2 | SE204895.026 | % | 60 - 130% | 115 |
| | TP14 0.3 | SE204895.034 | % | 60 - 130% | 123 |
| | TP18 0 | SE204895.041 | % | 60 - 130% | 115 |
| | TP20 0.4 | SE204895.045 | % | 60 - 130% | 111 |
| | TP21 1 | SE204895.047 | % | 60 - 130% | 123 |
| | TP22 1 | SE204895.049 | % | 60 - 130% | 113 |

## OP Pesticides in Soil

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| 2-fluorobiphenyl (Surrogate) | TP2 0.7 | SE204895.008 | % | 60 - 130% | 77 |
| | TP3 0.55 | SE204895.010 | % | 60 - 130% | 75 |
| | TP7 0 | SE204895.016 | % | 60 - 130% | 72 |
| | TP7 0.6 | SE204895.017 | % | 60 - 130% | 80 |
| | TP9 0.3 | SE204895.020 | % | 60 - 130% | 85 |
| | TP10 0.6 | SE204895.023 | % | 60 - 130% | 85 |
| | TP10 0.3 | SE204895.025 | % | 60 - 130% | 78 |
| | TP11 0.2 | SE204895.026 | % | 60 - 130% | 86 |
| | TP14 0.3 | SE204895.034 | % | 60 - 130% | 86 |
| | TP18 0 | SE204895.041 | % | 60 - 130% | 82 |
| | TP20 0.4 | SE204895.045 | % | 60 - 130% | 80 |
| | TP21 1 | SE204895.047 | % | 60 - 130% | 77 |
| | TP22 1 | SE204895.049 | % | 60 - 130% | 79 |
| d14-p-terphenyl (Surrogate) | TP2 0.7 | SE204895.008 | % | 60 - 130% | 87 |
| | TP3 0.55 | SE204895.010 | % | 60 - 130% | 82 |
| | TP7 0 | SE204895.016 | % | 60 - 130% | 76 |
| | TP7 0.6 | SE204895.017 | % | 60 - 130% | 89 |
| | TP9 0.3 | SE204895.020 | % | 60 - 130% | 90 |
| | TP10 0.6 | SE204895.023 | % | 60 - 130% | 85 |
| | TP10 0.3 | SE204895.025 | % | 60 - 130% | 77 |
| | TP11 0.2 | SE204895.026 | % | 60 - 130% | 88 |
| | TP14 0.3 | SE204895.034 | % | 60 - 130% | 75 |
| | TP18 0 | SE204895.041 | % | 60 - 130% | 83 |
| | TP20 0.4 | SE204895.045 | % | 60 - 130% | 84 |
| | TP21 1 | SE204895.047 | % | 60 - 130% | 82 |
| | TP22 1 | SE204895.049 | % | 60 - 130% | 83 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| 2-fluorobiphenyl (Surrogate) | BH1 1-1.1 | SE204895.001 | % | 70 - 130% | 77 |
| | BH1 2-4.2.5 | SE204895.002 | % | 70 - 130% | 79 |
| | BH2 1-1.45 | SE204895.003 | % | 70 - 130% | 77 |
| | BH2 2-2.45 | SE204895.004 | % | 70 - 130% | 84 |
| | TP1 0 | SE204895.005 | % | 70 - 130% | 76 |
| | TP1 1.6 | SE204895.006 | % | 70 - 130% | 96 |
| | TP2 0 | SE204895.007 | % | 70 - 130% | 77 |
| | TP2 0.7 | SE204895.008 | % | 70 - 130% | 77 |
| | TP3 0 | SE204895.009 | % | 70 - 130% | 79 |
| | TP3 0.55 | SE204895.010 | % | 70 - 130% | 75 |
| | TP4 0 | SE204895.011 | % | 70 - 130% | 74 |
| | TP4 0.7 | SE204895.012 | % | 70 - 130% | 80 |
| | TP5 0 | SE204895.013 | % | 70 - 130% | 79 |
| | TP5 0.5 | SE204895.014 | % | 70 - 130% | 82 |
| | TP6 1 | SE204895.015 | % | 70 - 130% | 84 |
| | TP7 0 | SE204895.016 | % | 70 - 130% | 72 |
| | TP7 0.6 | SE204895.017 | % | 70 - 130% | 80 |

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

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

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)** — **Method: ME-(AU)-[ENV]AN420**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| 2-fluorobiphenyl (Surrogate) | TP8 0 | SE204895.018 | % | 70 - 130% | 88 |
| | TP8 0.7 | SE204895.019 | % | 70 - 130% | 77 |
| | TP9 0.3 | SE204895.020 | % | 70 - 130% | 85 |
| | TP9 0.5 | SE204895.021 | % | 70 - 130% | 85 |
| | TP10 0 | SE204895.022 | % | 70 - 130% | 87 |
| | TP10 0.6 | SE204895.023 | % | 70 - 130% | 85 |
| | TP11 0 | SE204895.024 | % | 70 - 130% | 78 |
| | TP10 0.3 | SE204895.025 | % | 70 - 130% | 78 |
| | TP11 0.2 | SE204895.026 | % | 70 - 130% | 86 |
| | TP11 0.5 | SE204895.027 | % | 70 - 130% | 89 |
| | TP12 0 | SE204895.028 | % | 70 - 130% | 87 |
| | TP12 0.5 | SE204895.029 | % | 70 - 130% | 87 |
| | TP12 0.7 | SE204895.030 | % | 70 - 130% | 77 |
| | TP13 0 | SE204895.031 | % | 70 - 130% | 87 |
| | TP13 0.3 | SE204895.032 | % | 70 - 130% | 85 |
| | TP13 0.5 | SE204895.033 | % | 70 - 130% | 85 |
| | TP14 0.3 | SE204895.034 | % | 70 - 130% | 86 |
| | TP14 0.5 | SE204895.035 | % | 70 - 130% | 87 |
| | TP15 0 | SE204895.036 | % | 70 - 130% | 88 |
| | TP15 0.5 | SE204895.037 | % | 70 - 130% | 86 |
| | TP16 0.5 | SE204895.038 | % | 70 - 130% | 85 |
| | TP17 0.3 | SE204895.040 | % | 70 - 130% | 83 |
| | TP18 0 | SE204895.041 | % | 70 - 130% | 82 |
| | TP19 0 | SE204895.042 | % | 70 - 130% | 78 |
| | TP19 0.4 | SE204895.043 | % | 70 - 130% | 84 |
| | TP20 0 | SE204895.044 | % | 70 - 130% | 78 |
| | TP20 0.4 | SE204895.045 | % | 70 - 130% | 80 |
| | TP21 0 | SE204895.046 | % | 70 - 130% | 81 |
| | TP21 1 | SE204895.047 | % | 70 - 130% | 77 |
| | TP22 0 | SE204895.048 | % | 70 - 130% | 78 |
| | TP22 1 | SE204895.049 | % | 70 - 130% | 79 |
| | TP23 0 | SE204895.050 | % | 70 - 130% | 82 |
| | TP23 0.4 | SE204895.051 | % | 70 - 130% | 81 |
| | TP23 0.5 | SE204895.052 | % | 70 - 130% | 82 |
| | QC1 | SE204895.053 | % | 70 - 130% | 80 |
| | QC2 | SE204895.054 | % | 70 - 130% | 78 |
| d14-p-terphenyl (Surrogate) | BH1 1-1.1 | SE204895.001 | % | 70 - 130% | 84 |
| | BH1 2-4.2.5 | SE204895.002 | % | 70 - 130% | 84 |
| | BH2 1-1.45 | SE204895.003 | % | 70 - 130% | 82 |
| | BH2 2-2.45 | SE204895.004 | % | 70 - 130% | 85 |
| | TP1 0 | SE204895.005 | % | 70 - 130% | 82 |
| | TP1 1.6 | SE204895.006 | % | 70 - 130% | 93 |
| | TP2 0 | SE204895.007 | % | 70 - 130% | 84 |
| | TP2 0.7 | SE204895.008 | % | 70 - 130% | 87 |
| | TP3 0 | SE204895.009 | % | 70 - 130% | 81 |
| | TP3 0.55 | SE204895.010 | % | 70 - 130% | 82 |
| | TP4 0 | SE204895.011 | % | 70 - 130% | 80 |
| | TP4 0.7 | SE204895.012 | % | 70 - 130% | 87 |
| | TP5 0 | SE204895.013 | % | 70 - 130% | 77 |
| | TP5 0.5 | SE204895.014 | % | 70 - 130% | 89 |
| | TP6 1 | SE204895.015 | % | 70 - 130% | 92 |
| | TP7 0 | SE204895.016 | % | 70 - 130% | 76 |
| | TP7 0.6 | SE204895.017 | % | 70 - 130% | 89 |
| | TP8 0 | SE204895.018 | % | 70 - 130% | 94 |
| | TP8 0.7 | SE204895.019 | % | 70 - 130% | 82 |
| | TP9 0.3 | SE204895.020 | % | 70 - 130% | 90 |
| | TP9 0.5 | SE204895.021 | % | 70 - 130% | 87 |
| | TP10 0 | SE204895.022 | % | 70 - 130% | 90 |
| | TP10 0.6 | SE204895.023 | % | 70 - 130% | 85 |
| | TP11 0 | SE204895.024 | % | 70 - 130% | 83 |
| | TP10 0.3 | SE204895.025 | % | 70 - 130% | 77 |

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

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

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)** — **Method: ME-(AU)-[ENV]AN420**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| d14-p-terphenyl (Surrogate) | TP11 0.2 | SE204895.026 | % | 70 - 130% | 88 |
| | TP11 0.5 | SE204895.027 | % | 70 - 130% | 76 |
| | TP12 0 | SE204895.028 | % | 70 - 130% | 75 |
| | TP12 0.5 | SE204895.029 | % | 70 - 130% | 73 |
| | TP12 0.7 | SE204895.030 | % | 70 - 130% | 73 |
| | TP13 0 | SE204895.031 | % | 70 - 130% | 75 |
| | TP13 0.3 | SE204895.032 | % | 70 - 130% | 74 |
| | TP13 0.5 | SE204895.033 | % | 70 - 130% | 72 |
| | TP14 0.3 | SE204895.034 | % | 70 - 130% | 75 |
| | TP14 0.5 | SE204895.035 | % | 70 - 130% | 77 |
| | TP15 0 | SE204895.036 | % | 70 - 130% | 77 |
| | TP15 0.5 | SE204895.037 | % | 70 - 130% | 73 |
| | TP16 0.5 | SE204895.038 | % | 70 - 130% | 71 |
| | TP17 0.3 | SE204895.040 | % | 70 - 130% | 75 |
| | TP18 0 | SE204895.041 | % | 70 - 130% | 83 |
| | TP19 0 | SE204895.042 | % | 70 - 130% | 84 |
| | TP19 0.4 | SE204895.043 | % | 70 - 130% | 81 |
| | TP20 0 | SE204895.044 | % | 70 - 130% | 79 |
| | TP20 0.4 | SE204895.045 | % | 70 - 130% | 84 |
| | TP21 0 | SE204895.046 | % | 70 - 130% | 80 |
| | TP21 1 | SE204895.047 | % | 70 - 130% | 82 |
| | TP22 0 | SE204895.048 | % | 70 - 130% | 82 |
| | TP22 1 | SE204895.049 | % | 70 - 130% | 83 |
| | TP23 0 | SE204895.050 | % | 70 - 130% | 85 |
| | TP23 0.4 | SE204895.051 | % | 70 - 130% | 80 |
| | TP23 0.5 | SE204895.052 | % | 70 - 130% | 81 |
| | QC1 | SE204895.053 | % | 70 - 130% | 81 |
| | QC2 | SE204895.054 | % | 70 - 130% | 78 |
| d5-nitrobenzene (Surrogate) | BH1 1-1.1 | SE204895.001 | % | 70 - 130% | 79 |
| | BH1 2-4.2.5 | SE204895.002 | % | 70 - 130% | 79 |
| | BH2 1-1.45 | SE204895.003 | % | 70 - 130% | 78 |
| | BH2 2-2.45 | SE204895.004 | % | 70 - 130% | 84 |
| | TP1 0 | SE204895.005 | % | 70 - 130% | 74 |
| | TP1 1.6 | SE204895.006 | % | 70 - 130% | 86 |
| | TP2 0 | SE204895.007 | % | 70 - 130% | 78 |
| | TP2 0.7 | SE204895.008 | % | 70 - 130% | 76 |
| | TP3 0 | SE204895.009 | % | 70 - 130% | 75 |
| | TP3 0.55 | SE204895.010 | % | 70 - 130% | 75 |
| | TP4 0 | SE204895.011 | % | 70 - 130% | 76 |
| | TP4 0.7 | SE204895.012 | % | 70 - 130% | 79 |
| | TP5 0 | SE204895.013 | % | 70 - 130% | 75 |
| | TP5 0.5 | SE204895.014 | % | 70 - 130% | 88 |
| | TP6 1 | SE204895.015 | % | 70 - 130% | 81 |
| | TP7 0 | SE204895.016 | % | 70 - 130% | 69 ① |
| | TP7 0.6 | SE204895.017 | % | 70 - 130% | 78 |
| | TP8 0 | SE204895.018 | % | 70 - 130% | 84 |
| | TP8 0.7 | SE204895.019 | % | 70 - 130% | 76 |
| | TP9 0.3 | SE204895.020 | % | 70 - 130% | 82 |
| | TP9 0.5 | SE204895.021 | % | 70 - 130% | 83 |
| | TP10 0 | SE204895.022 | % | 70 - 130% | 82 |
| | TP10 0.6 | SE204895.023 | % | 70 - 130% | 81 |
| | TP11 0 | SE204895.024 | % | 70 - 130% | 80 |
| | TP10 0.3 | SE204895.025 | % | 70 - 130% | 75 |
| | TP11 0.2 | SE204895.026 | % | 70 - 130% | 83 |
| | TP11 0.5 | SE204895.027 | % | 70 - 130% | 93 |
| | TP12 0 | SE204895.028 | % | 70 - 130% | 97 |
| | TP12 0.5 | SE204895.029 | % | 70 - 130% | 98 |
| | TP12 0.7 | SE204895.030 | % | 70 - 130% | 97 |
| | TP13 0 | SE204895.031 | % | 70 - 130% | 95 |
| | TP13 0.3 | SE204895.032 | % | 70 - 130% | 97 |
| | TP13 0.5 | SE204895.033 | % | 70 - 130% | 97 |

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

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

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

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| d5-nitrobenzene (Surrogate) | TP14 0.3 | SE204895.034 | % | 70 - 130% | 97 |
| | TP14 0.5 | SE204895.035 | % | 70 - 130% | 97 |
| | TP15 0 | SE204895.036 | % | 70 - 130% | 96 |
| | TP15 0.5 | SE204895.037 | % | 70 - 130% | 96 |
| | TP16 0.5 | SE204895.038 | % | 70 - 130% | 95 |
| | TP17 0.3 | SE204895.040 | % | 70 - 130% | 95 |
| | TP18 0 | SE204895.041 | % | 70 - 130% | 80 |
| | TP19 0 | SE204895.042 | % | 70 - 130% | 81 |
| | TP19 0.4 | SE204895.043 | % | 70 - 130% | 81 |
| | TP20 0 | SE204895.044 | % | 70 - 130% | 80 |
| | TP20 0.4 | SE204895.045 | % | 70 - 130% | 81 |
| | TP21 0 | SE204895.046 | % | 70 - 130% | 78 |
| | TP21 1 | SE204895.047 | % | 70 - 130% | 74 |
| | TP22 0 | SE204895.048 | % | 70 - 130% | 80 |
| | TP22 1 | SE204895.049 | % | 70 - 130% | 75 |
| | TP23 0 | SE204895.050 | % | 70 - 130% | 79 |
| | TP23 0.4 | SE204895.051 | % | 70 - 130% | 78 |
| | TP23 0.5 | SE204895.052 | % | 70 - 130% | 81 |
| | QC1 | SE204895.053 | % | 70 - 130% | 79 |
| | QC2 | SE204895.054 | % | 70 - 130% | 76 |

## PCBs in Soil

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Tetrachloro-m-xylene (TCMX) (Surrogate) | TP2 0.7 | SE204895.008 | % | 60 - 130% | 106 |
| | TP3 0.55 | SE204895.010 | % | 60 - 130% | 103 |
| | TP7 0 | SE204895.016 | % | 60 - 130% | 123 |
| | TP7 0.6 | SE204895.017 | % | 60 - 130% | 96 |
| | TP9 0.3 | SE204895.020 | % | 60 - 130% | 115 |
| | TP10 0.6 | SE204895.023 | % | 60 - 130% | 99 |
| | TP10 0.3 | SE204895.025 | % | 60 - 130% | 112 |
| | TP11 0.2 | SE204895.026 | % | 60 - 130% | 115 |
| | TP14 0.3 | SE204895.034 | % | 60 - 130% | 123 |
| | TP18 0 | SE204895.041 | % | 60 - 130% | 115 |
| | TP20 0.4 | SE204895.045 | % | 60 - 130% | 111 |
| | TP21 1 | SE204895.047 | % | 60 - 130% | 123 |
| | TP22 1 | SE204895.049 | % | 60 - 130% | 113 |

## Speciated Phenols in Soil

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| 2,4,6-Tribromophenol (Surrogate) | TP2 0.7 | SE204895.008 | % | 70 - 130% | 93 |
| | TP3 0.55 | SE204895.010 | % | 70 - 130% | 114 |
| | TP7 0 | SE204895.016 | % | 70 - 130% | 115 |
| | TP7 0.6 | SE204895.017 | % | 70 - 130% | 112 |
| | TP9 0.3 | SE204895.020 | % | 70 - 130% | 73 |
| | TP10 0.6 | SE204895.023 | % | 70 - 130% | 78 |
| | TP10 0.3 | SE204895.025 | % | 70 - 130% | 95 |
| | TP11 0.2 | SE204895.026 | % | 70 - 130% | 121 |
| | TP14 0.3 | SE204895.034 | % | 70 - 130% | 75 |
| | TP18 0 | SE204895.041 | % | 70 - 130% | 120 |
| | TP20 0.4 | SE204895.045 | % | 70 - 130% | 108 |
| | TP21 1 | SE204895.047 | % | 70 - 130% | 123 |
| | TP22 1 | SE204895.049 | % | 70 - 130% | 107 |
| d5-phenol (Surrogate) | TP2 0.7 | SE204895.008 | % | 50 - 130% | 79 |
| | TP3 0.55 | SE204895.010 | % | 50 - 130% | 91 |
| | TP7 0 | SE204895.016 | % | 50 - 130% | 71 |
| | TP7 0.6 | SE204895.017 | % | 50 - 130% | 99 |
| | TP9 0.3 | SE204895.020 | % | 50 - 130% | 116 |
| | TP10 0.6 | SE204895.023 | % | 50 - 130% | 88 |
| | TP10 0.3 | SE204895.025 | % | 50 - 130% | 70 |
| | TP11 0.2 | SE204895.026 | % | 50 - 130% | 119 |
| | TP14 0.3 | SE204895.034 | % | 50 - 130% | 80 |
| | TP18 0 | SE204895.041 | % | 50 - 130% | 73 |

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

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

**Speciated Phenols in Soil (continued)** — Method: ME-(AU)-[ENV]AN420

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| d5-phenol (Surrogate) | TP20 0.4 | SE204895.045 | % | 50 - 130% | 99 |
| | TP21 1 | SE204895.047 | % | 50 - 130% | 72 |
| | TP22 1 | SE204895.049 | % | 50 - 130% | 85 |

**VOC's in Soil** — Method: ME-(AU)-[ENV]AN433

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Bromofluorobenzene (Surrogate) | BH1 1-1.1 | SE204895.001 | % | 60 - 130% | 78 |
| | BH1 2-4.2.5 | SE204895.002 | % | 60 - 130% | 62 |
| | BH2 1-1.45 | SE204895.003 | % | 60 - 130% | 78 |
| | BH2 2-2.45 | SE204895.004 | % | 60 - 130% | 79 |
| | TP1 0 | SE204895.005 | % | 60 - 130% | 72 |
| | TP1 1.6 | SE204895.006 | % | 60 - 130% | 76 |
| | TP2 0 | SE204895.007 | % | 60 - 130% | 83 |
| | TP2 0.7 | SE204895.008 | % | 60 - 130% | 86 |
| | TP3 0 | SE204895.009 | % | 60 - 130% | 82 |
| | TP3 0.55 | SE204895.010 | % | 60 - 130% | 70 |
| | TP4 0 | SE204895.011 | % | 60 - 130% | 84 |
| | TP4 0.7 | SE204895.012 | % | 60 - 130% | 78 |
| | TP5 0 | SE204895.013 | % | 60 - 130% | 82 |
| | TP5 0.5 | SE204895.014 | % | 60 - 130% | 86 |
| | TP6 1 | SE204895.015 | % | 60 - 130% | 76 |
| | TP7 0 | SE204895.016 | % | 60 - 130% | 85 |
| | TP7 0.6 | SE204895.017 | % | 60 - 130% | 81 |
| | TP8 0 | SE204895.018 | % | 60 - 130% | 82 |
| | TP8 0.7 | SE204895.019 | % | 60 - 130% | 80 |
| | TP9 0.3 | SE204895.020 | % | 60 - 130% | 73 |
| | TP9 0.5 | SE204895.021 | % | 60 - 130% | 82 |
| | TP10 0 | SE204895.022 | % | 60 - 130% | 88 |
| | TP10 0.6 | SE204895.023 | % | 60 - 130% | 82 |
| | TP11 0 | SE204895.024 | % | 60 - 130% | 88 |
| | TP10 0.3 | SE204895.025 | % | 60 - 130% | 81 |
| | TP11 0.2 | SE204895.026 | % | 60 - 130% | 86 |
| | TP11 0.5 | SE204895.027 | % | 60 - 130% | 86 |
| | TP12 0 | SE204895.028 | % | 60 - 130% | 82 |
| | TP12 0.5 | SE204895.029 | % | 60 - 130% | 77 |
| | TP12 0.7 | SE204895.030 | % | 60 - 130% | 78 |
| | TP13 0 | SE204895.031 | % | 60 - 130% | 81 |
| | TP13 0.3 | SE204895.032 | % | 60 - 130% | 77 |
| | TP13 0.5 | SE204895.033 | % | 60 - 130% | 80 |
| | TP14 0.3 | SE204895.034 | % | 60 - 130% | 84 |
| | TP14 0.5 | SE204895.035 | % | 60 - 130% | 86 |
| | TP15 0 | SE204895.036 | % | 60 - 130% | 76 |
| | TP15 0.5 | SE204895.037 | % | 60 - 130% | 83 |
| | TP16 0.5 | SE204895.038 | % | 60 - 130% | 79 |
| | TP17 0.3 | SE204895.040 | % | 60 - 130% | 73 |
| | TP18 0 | SE204895.041 | % | 60 - 130% | 87 |
| | TP19 0 | SE204895.042 | % | 60 - 130% | 75 |
| | TP19 0.4 | SE204895.043 | % | 60 - 130% | 78 |
| | TP20 0 | SE204895.044 | % | 60 - 130% | 78 |
| | TP20 0.4 | SE204895.045 | % | 60 - 130% | 95 |
| | TP21 0 | SE204895.046 | % | 60 - 130% | 99 |
| | TP21 1 | SE204895.047 | % | 60 - 130% | 82 |
| | TP22 0 | SE204895.048 | % | 60 - 130% | 78 |
| | TP22 1 | SE204895.049 | % | 60 - 130% | 75 |
| | TP23 0 | SE204895.050 | % | 60 - 130% | 80 |
| | TP23 0.4 | SE204895.051 | % | 60 - 130% | 88 |
| | TP23 0.5 | SE204895.052 | % | 60 - 130% | 79 |
| | QC1 | SE204895.053 | % | 60 - 130% | 88 |
| | QC2 | SE204895.054 | % | 60 - 130% | 90 |
| | Trip Blank | SE204895.055 | % | 60 - 130% | 94 |
| | Trip Spike | SE204895.056 | % | 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 identifer 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 % |
|---|---|---|---|---|---|
| d4-1,2-dichloroethane (Surrogate) | BH1 1-1.1 | SE204895.001 | % | 60 - 130% | 94 |
| | BH1 2-4.2.5 | SE204895.002 | % | 60 - 130% | 78 |
| | BH2 1-1.45 | SE204895.003 | % | 60 - 130% | 94 |
| | BH2 2-2.45 | SE204895.004 | % | 60 - 130% | 82 |
| | TP1 0 | SE204895.005 | % | 60 - 130% | 80 |
| | TP1 1.6 | SE204895.006 | % | 60 - 130% | 96 |
| | TP2 0 | SE204895.007 | % | 60 - 130% | 93 |
| | TP2 0.7 | SE204895.008 | % | 60 - 130% | 99 |
| | TP3 0 | SE204895.009 | % | 60 - 130% | 94 |
| | TP3 0.55 | SE204895.010 | % | 60 - 130% | 86 |
| | TP4 0 | SE204895.011 | % | 60 - 130% | 96 |
| | TP4 0.7 | SE204895.012 | % | 60 - 130% | 96 |
| | TP5 0 | SE204895.013 | % | 60 - 130% | 91 |
| | TP5 0.5 | SE204895.014 | % | 60 - 130% | 100 |
| | TP6 1 | SE204895.015 | % | 60 - 130% | 95 |
| | TP7 0 | SE204895.016 | % | 60 - 130% | 102 |
| | TP7 0.6 | SE204895.017 | % | 60 - 130% | 96 |
| | TP8 0 | SE204895.018 | % | 60 - 130% | 101 |
| | TP8 0.7 | SE204895.019 | % | 60 - 130% | 92 |
| | TP9 0.3 | SE204895.020 | % | 60 - 130% | 89 |
| | TP9 0.5 | SE204895.021 | % | 60 - 130% | 96 |
| | TP10 0 | SE204895.022 | % | 60 - 130% | 105 |
| | TP10 0.6 | SE204895.023 | % | 60 - 130% | 99 |
| | TP11 0 | SE204895.024 | % | 60 - 130% | 106 |
| | TP10 0.3 | SE204895.025 | % | 60 - 130% | 97 |
| | TP11 0.2 | SE204895.026 | % | 60 - 130% | 102 |
| | TP11 0.5 | SE204895.027 | % | 60 - 130% | 105 |
| | TP12 0 | SE204895.028 | % | 60 - 130% | 99 |
| | TP12 0.5 | SE204895.029 | % | 60 - 130% | 95 |
| | TP12 0.7 | SE204895.030 | % | 60 - 130% | 93 |
| | TP13 0 | SE204895.031 | % | 60 - 130% | 93 |
| | TP13 0.3 | SE204895.032 | % | 60 - 130% | 96 |
| | TP13 0.5 | SE204895.033 | % | 60 - 130% | 94 |
| | TP14 0.3 | SE204895.034 | % | 60 - 130% | 101 |
| | TP14 0.5 | SE204895.035 | % | 60 - 130% | 105 |
| | TP15 0 | SE204895.036 | % | 60 - 130% | 92 |
| | TP15 0.5 | SE204895.037 | % | 60 - 130% | 101 |
| | TP16 0.5 | SE204895.038 | % | 60 - 130% | 98 |
| | TP17 0.3 | SE204895.040 | % | 60 - 130% | 87 |
| | TP18 0 | SE204895.041 | % | 60 - 130% | 103 |
| | TP19 0 | SE204895.042 | % | 60 - 130% | 75 |
| | TP19 0.4 | SE204895.043 | % | 60 - 130% | 74 |
| | TP20 0 | SE204895.044 | % | 60 - 130% | 70 |
| | TP20 0.4 | SE204895.045 | % | 60 - 130% | 108 |
| | TP21 0 | SE204895.046 | % | 60 - 130% | 113 |
| | TP21 1 | SE204895.047 | % | 60 - 130% | 75 |
| | TP22 0 | SE204895.048 | % | 60 - 130% | 75 |
| | TP22 1 | SE204895.049 | % | 60 - 130% | 75 |
| | TP23 0 | SE204895.050 | % | 60 - 130% | 74 |
| | TP23 0.4 | SE204895.051 | % | 60 - 130% | 102 |
| | TP23 0.5 | SE204895.052 | % | 60 - 130% | 76 |
| | QC1 | SE204895.053 | % | 60 - 130% | 104 |
| | QC2 | SE204895.054 | % | 60 - 130% | 106 |
| | Trip Blank | SE204895.055 | % | 60 - 130% | 111 |
| | Trip Spike | SE204895.056 | % | 60 - 130% | 109 |
| d8-toluene (Surrogate) | BH1 1-1.1 | SE204895.001 | % | 60 - 130% | 100 |
| | BH1 2-4.2.5 | SE204895.002 | % | 60 - 130% | 80 |
| | BH2 1-1.45 | SE204895.003 | % | 60 - 130% | 102 |
| | BH2 2-2.45 | SE204895.004 | % | 60 - 130% | 89 |
| | TP1 0 | SE204895.005 | % | 60 - 130% | 85 |
| | TP1 1.6 | SE204895.006 | % | 60 - 130% | 102 |

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

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

## VOC's in Soil (continued)

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| d8-toluene (Surrogate) | TP2 0 | SE204895.007 | % | 60 - 130% | 96 |
| | TP2 0.7 | SE204895.008 | % | 60 - 130% | 103 |
| | TP3 0 | SE204895.009 | % | 60 - 130% | 99 |
| | TP3 0.55 | SE204895.010 | % | 60 - 130% | 91 |
| | TP4 0 | SE204895.011 | % | 60 - 130% | 101 |
| | TP4 0.7 | SE204895.012 | % | 60 - 130% | 101 |
| | TP5 0 | SE204895.013 | % | 60 - 130% | 101 |
| | TP5 0.5 | SE204895.014 | % | 60 - 130% | 107 |
| | TP6 1 | SE204895.015 | % | 60 - 130% | 102 |
| | TP7 0 | SE204895.016 | % | 60 - 130% | 107 |
| | TP7 0.6 | SE204895.017 | % | 60 - 130% | 101 |
| | TP8 0 | SE204895.018 | % | 60 - 130% | 105 |
| | TP8 0.7 | SE204895.019 | % | 60 - 130% | 100 |
| | TP9 0.3 | SE204895.020 | % | 60 - 130% | 95 |
| | TP9 0.5 | SE204895.021 | % | 60 - 130% | 102 |
| | TP10 0 | SE204895.022 | % | 60 - 130% | 108 |
| | TP10 0.6 | SE204895.023 | % | 60 - 130% | 100 |
| | TP11 0 | SE204895.024 | % | 60 - 130% | 110 |
| | TP10 0.3 | SE204895.025 | % | 60 - 130% | 104 |
| | TP11 0.2 | SE204895.026 | % | 60 - 130% | 110 |
| | TP11 0.5 | SE204895.027 | % | 60 - 130% | 110 |
| | TP12 0 | SE204895.028 | % | 60 - 130% | 105 |
| | TP12 0.5 | SE204895.029 | % | 60 - 130% | 102 |
| | TP12 0.7 | SE204895.030 | % | 60 - 130% | 103 |
| | TP13 0 | SE204895.031 | % | 60 - 130% | 102 |
| | TP13 0.3 | SE204895.032 | % | 60 - 130% | 103 |
| | TP13 0.5 | SE204895.033 | % | 60 - 130% | 103 |
| | TP14 0.3 | SE204895.034 | % | 60 - 130% | 108 |
| | TP14 0.5 | SE204895.035 | % | 60 - 130% | 109 |
| | TP15 0 | SE204895.036 | % | 60 - 130% | 100 |
| | TP15 0.5 | SE204895.037 | % | 60 - 130% | 109 |
| | TP16 0.5 | SE204895.038 | % | 60 - 130% | 105 |
| | TP17 0.3 | SE204895.040 | % | 60 - 130% | 94 |
| | TP18 0 | SE204895.041 | % | 60 - 130% | 92 |
| | TP19 0 | SE204895.042 | % | 60 - 130% | 71 |
| | TP19 0.4 | SE204895.043 | % | 60 - 130% | 70 |
| | TP20 0 | SE204895.044 | % | 60 - 130% | 65 |
| | TP20 0.4 | SE204895.045 | % | 60 - 130% | 108 |
| | TP21 0 | SE204895.046 | % | 60 - 130% | 113 |
| | TP21 1 | SE204895.047 | % | 60 - 130% | 73 |
| | TP22 0 | SE204895.048 | % | 60 - 130% | 73 |
| | TP22 1 | SE204895.049 | % | 60 - 130% | 70 |
| | TP23 0 | SE204895.050 | % | 60 - 130% | 72 |
| | TP23 0.4 | SE204895.051 | % | 60 - 130% | 100 |
| | TP23 0.5 | SE204895.052 | % | 60 - 130% | 71 |
| | QC1 | SE204895.053 | % | 60 - 130% | 104 |
| | QC2 | SE204895.054 | % | 60 - 130% | 104 |
| | Trip Blank | SE204895.055 | % | 60 - 130% | 113 |
| | Trip Spike | SE204895.056 | % | 60 - 130% | 110 |

## Volatile Petroleum Hydrocarbons in Soil

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Bromofluorobenzene (Surrogate) | BH1 1-1.1 | SE204895.001 | % | 60 - 130% | 78 |
| | BH1 2-4.2.5 | SE204895.002 | % | 60 - 130% | 62 |
| | BH2 1-1.45 | SE204895.003 | % | 60 - 130% | 78 |
| | BH2 2-2.45 | SE204895.004 | % | 60 - 130% | 79 |
| | TP1 0 | SE204895.005 | % | 60 - 130% | 72 |
| | TP1 1.6 | SE204895.006 | % | 60 - 130% | 76 |
| | TP2 0 | SE204895.007 | % | 60 - 130% | 83 |
| | TP2 0.7 | SE204895.008 | % | 60 - 130% | 86 |
| | TP3 0 | SE204895.009 | % | 60 - 130% | 82 |

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

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

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Bromofluorobenzene (Surrogate) | TP3 0.55 | SE204895.010 | % | 60 - 130% | 70 |
| | TP4 0 | SE204895.011 | % | 60 - 130% | 84 |
| | TP4 0.7 | SE204895.012 | % | 60 - 130% | 78 |
| | TP5 0 | SE204895.013 | % | 60 - 130% | 82 |
| | TP5 0.5 | SE204895.014 | % | 60 - 130% | 86 |
| | TP6 1 | SE204895.015 | % | 60 - 130% | 76 |
| | TP7 0 | SE204895.016 | % | 60 - 130% | 85 |
| | TP7 0.6 | SE204895.017 | % | 60 - 130% | 81 |
| | TP8 0 | SE204895.018 | % | 60 - 130% | 82 |
| | TP8 0.7 | SE204895.019 | % | 60 - 130% | 80 |
| | TP9 0.3 | SE204895.020 | % | 60 - 130% | 73 |
| | TP9 0.5 | SE204895.021 | % | 60 - 130% | 82 |
| | TP10 0 | SE204895.022 | % | 60 - 130% | 88 |
| | TP10 0.6 | SE204895.023 | % | 60 - 130% | 82 |
| | TP11 0 | SE204895.024 | % | 60 - 130% | 88 |
| | TP10 0.3 | SE204895.025 | % | 60 - 130% | 81 |
| | TP11 0.2 | SE204895.026 | % | 60 - 130% | 86 |
| | TP11 0.5 | SE204895.027 | % | 60 - 130% | 86 |
| | TP12 0 | SE204895.028 | % | 60 - 130% | 82 |
| | TP12 0.5 | SE204895.029 | % | 60 - 130% | 77 |
| | TP12 0.7 | SE204895.030 | % | 60 - 130% | 78 |
| | TP13 0 | SE204895.031 | % | 60 - 130% | 81 |
| | TP13 0.3 | SE204895.032 | % | 60 - 130% | 77 |
| | TP13 0.5 | SE204895.033 | % | 60 - 130% | 80 |
| | TP14 0.3 | SE204895.034 | % | 60 - 130% | 84 |
| | TP14 0.5 | SE204895.035 | % | 60 - 130% | 86 |
| | TP15 0 | SE204895.036 | % | 60 - 130% | 76 |
| | TP15 0.5 | SE204895.037 | % | 60 - 130% | 83 |
| | TP16 0.5 | SE204895.038 | % | 60 - 130% | 79 |
| | TP17 0.3 | SE204895.040 | % | 60 - 130% | 73 |
| | TP18 0 | SE204895.041 | % | 60 - 130% | 87 |
| | TP19 0 | SE204895.042 | % | 60 - 130% | 75 |
| | TP19 0.4 | SE204895.043 | % | 60 - 130% | 78 |
| | TP20 0 | SE204895.044 | % | 60 - 130% | 78 |
| | TP20 0.4 | SE204895.045 | % | 60 - 130% | 95 |
| | TP21 0 | SE204895.046 | % | 60 - 130% | 99 |
| | TP21 1 | SE204895.047 | % | 60 - 130% | 82 |
| | TP22 0 | SE204895.048 | % | 60 - 130% | 78 |
| | TP22 1 | SE204895.049 | % | 60 - 130% | 75 |
| | TP23 0 | SE204895.050 | % | 60 - 130% | 80 |
| | TP23 0.4 | SE204895.051 | % | 60 - 130% | 88 |
| | TP23 0.5 | SE204895.052 | % | 60 - 130% | 79 |
| | QC1 | SE204895.053 | % | 60 - 130% | 88 |
| | QC2 | SE204895.054 | % | 60 - 130% | 90 |
| d4-1,2-dichloroethane (Surrogate) | BH1 1-1.1 | SE204895.001 | % | 60 - 130% | 94 |
| | BH1 2-4.2.5 | SE204895.002 | % | 60 - 130% | 78 |
| | BH2 1-1.45 | SE204895.003 | % | 60 - 130% | 94 |
| | BH2 2-2.45 | SE204895.004 | % | 60 - 130% | 82 |
| | TP1 0 | SE204895.005 | % | 60 - 130% | 80 |
| | TP1 1.6 | SE204895.006 | % | 60 - 130% | 96 |
| | TP2 0 | SE204895.007 | % | 60 - 130% | 93 |
| | TP2 0.7 | SE204895.008 | % | 60 - 130% | 99 |
| | TP3 0 | SE204895.009 | % | 60 - 130% | 94 |
| | TP3 0.55 | SE204895.010 | % | 60 - 130% | 86 |
| | TP4 0 | SE204895.011 | % | 60 - 130% | 96 |
| | TP4 0.7 | SE204895.012 | % | 60 - 130% | 96 |
| | TP5 0 | SE204895.013 | % | 60 - 130% | 91 |
| | TP5 0.5 | SE204895.014 | % | 60 - 130% | 100 |
| | TP6 1 | SE204895.015 | % | 60 - 130% | 95 |
| | TP7 0 | SE204895.016 | % | 60 - 130% | 102 |
| | TP7 0.6 | SE204895.017 | % | 60 - 130% | 96 |

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

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

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| d4-1,2-dichloroethane (Surrogate) | TP8 0 | SE204895.018 | % | 60 - 130% | 101 |
| | TP8 0.7 | SE204895.019 | % | 60 - 130% | 92 |
| | TP9 0.3 | SE204895.020 | % | 60 - 130% | 89 |
| | TP9 0.5 | SE204895.021 | % | 60 - 130% | 96 |
| | TP10 0 | SE204895.022 | % | 60 - 130% | 105 |
| | TP10 0.6 | SE204895.023 | % | 60 - 130% | 99 |
| | TP11 0 | SE204895.024 | % | 60 - 130% | 106 |
| | TP10 0.3 | SE204895.025 | % | 60 - 130% | 97 |
| | TP11 0.2 | SE204895.026 | % | 60 - 130% | 102 |
| | TP11 0.5 | SE204895.027 | % | 60 - 130% | 105 |
| | TP12 0 | SE204895.028 | % | 60 - 130% | 99 |
| | TP12 0.5 | SE204895.029 | % | 60 - 130% | 95 |
| | TP12 0.7 | SE204895.030 | % | 60 - 130% | 93 |
| | TP13 0 | SE204895.031 | % | 60 - 130% | 93 |
| | TP13 0.3 | SE204895.032 | % | 60 - 130% | 96 |
| | TP13 0.5 | SE204895.033 | % | 60 - 130% | 94 |
| | TP14 0.3 | SE204895.034 | % | 60 - 130% | 101 |
| | TP14 0.5 | SE204895.035 | % | 60 - 130% | 105 |
| | TP15 0 | SE204895.036 | % | 60 - 130% | 92 |
| | TP15 0.5 | SE204895.037 | % | 60 - 130% | 101 |
| | TP16 0.5 | SE204895.038 | % | 60 - 130% | 98 |
| | TP17 0.3 | SE204895.040 | % | 60 - 130% | 87 |
| | TP18 0 | SE204895.041 | % | 60 - 130% | 103 |
| | TP19 0 | SE204895.042 | % | 60 - 130% | 75 |
| | TP19 0.4 | SE204895.043 | % | 60 - 130% | 74 |
| | TP20 0 | SE204895.044 | % | 60 - 130% | 70 |
| | TP20 0.4 | SE204895.045 | % | 60 - 130% | 108 |
| | TP21 0 | SE204895.046 | % | 60 - 130% | 113 |
| | TP21 1 | SE204895.047 | % | 60 - 130% | 75 |
| | TP22 0 | SE204895.048 | % | 60 - 130% | 75 |
| | TP22 1 | SE204895.049 | % | 60 - 130% | 75 |
| | TP23 0 | SE204895.050 | % | 60 - 130% | 74 |
| | TP23 0.4 | SE204895.051 | % | 60 - 130% | 102 |
| | TP23 0.5 | SE204895.052 | % | 60 - 130% | 76 |
| | QC1 | SE204895.053 | % | 60 - 130% | 104 |
| | QC2 | SE204895.054 | % | 60 - 130% | 106 |
| d8-toluene (Surrogate) | BH1 1-1.1 | SE204895.001 | % | 60 - 130% | 100 |
| | BH1 2-4.2.5 | SE204895.002 | % | 60 - 130% | 80 |
| | BH2 1-1.45 | SE204895.003 | % | 60 - 130% | 102 |
| | BH2 2-2.45 | SE204895.004 | % | 60 - 130% | 89 |
| | TP1 0 | SE204895.005 | % | 60 - 130% | 85 |
| | TP1 1.6 | SE204895.006 | % | 60 - 130% | 102 |
| | TP2 0 | SE204895.007 | % | 60 - 130% | 96 |
| | TP2 0.7 | SE204895.008 | % | 60 - 130% | 103 |
| | TP3 0 | SE204895.009 | % | 60 - 130% | 99 |
| | TP3 0.55 | SE204895.010 | % | 60 - 130% | 91 |
| | TP4 0 | SE204895.011 | % | 60 - 130% | 101 |
| | TP4 0.7 | SE204895.012 | % | 60 - 130% | 101 |
| | TP5 0 | SE204895.013 | % | 60 - 130% | 101 |
| | TP5 0.5 | SE204895.014 | % | 60 - 130% | 107 |
| | TP6 1 | SE204895.015 | % | 60 - 130% | 102 |
| | TP7 0 | SE204895.016 | % | 60 - 130% | 107 |
| | TP7 0.6 | SE204895.017 | % | 60 - 130% | 101 |
| | TP8 0 | SE204895.018 | % | 60 - 130% | 105 |
| | TP8 0.7 | SE204895.019 | % | 60 - 130% | 100 |
| | TP9 0.3 | SE204895.020 | % | 60 - 130% | 95 |
| | TP9 0.5 | SE204895.021 | % | 60 - 130% | 102 |
| | TP10 0 | SE204895.022 | % | 60 - 130% | 108 |
| | TP10 0.6 | SE204895.023 | % | 60 - 130% | 100 |
| | TP11 0 | SE204895.024 | % | 60 - 130% | 110 |
| | TP10 0.3 | SE204895.025 | % | 60 - 130% | 104 |

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

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

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| d8-toluene (Surrogate) | TP11 0.2 | SE204895.026 | % | 60 - 130% | 110 |
| | TP11 0.5 | SE204895.027 | % | 60 - 130% | 110 |
| | TP12 0 | SE204895.028 | % | 60 - 130% | 105 |
| | TP12 0.5 | SE204895.029 | % | 60 - 130% | 102 |
| | TP12 0.7 | SE204895.030 | % | 60 - 130% | 103 |
| | TP13 0 | SE204895.031 | % | 60 - 130% | 102 |
| | TP13 0.3 | SE204895.032 | % | 60 - 130% | 103 |
| | TP13 0.5 | SE204895.033 | % | 60 - 130% | 103 |
| | TP14 0.3 | SE204895.034 | % | 60 - 130% | 108 |
| | TP14 0.5 | SE204895.035 | % | 60 - 130% | 109 |
| | TP15 0 | SE204895.036 | % | 60 - 130% | 100 |
| | TP15 0.5 | SE204895.037 | % | 60 - 130% | 109 |
| | TP16 0.5 | SE204895.038 | % | 60 - 130% | 105 |
| | TP17 0.3 | SE204895.040 | % | 60 - 130% | 94 |
| | TP18 0 | SE204895.041 | % | 60 - 130% | 92 |
| | TP19 0 | SE204895.042 | % | 60 - 130% | 71 |
| | TP19 0.4 | SE204895.043 | % | 60 - 130% | 70 |
| | TP20 0 | SE204895.044 | % | 60 - 130% | 65 |
| | TP20 0.4 | SE204895.045 | % | 60 - 130% | 108 |
| | TP21 0 | SE204895.046 | % | 60 - 130% | 113 |
| | TP21 1 | SE204895.047 | % | 60 - 130% | 73 |
| | TP22 0 | SE204895.048 | % | 60 - 130% | 73 |
| | TP22 1 | SE204895.049 | % | 60 - 130% | 70 |
| | TP23 0 | SE204895.050 | % | 60 - 130% | 72 |
| | TP23 0.4 | SE204895.051 | % | 60 - 130% | 100 |
| | TP23 0.5 | SE204895.052 | % | 60 - 130% | 71 |
| | QC1 | SE204895.053 | % | 60 - 130% | 104 |
| | QC2 | SE204895.054 | % | 60 - 130% | 104 |

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.

### Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB197299.001 | Exchangeable Sodium, Na | mg/kg | 2 | 0 |
| | Exchangeable Potassium, K | mg/kg | 2 | 0 |
| | Exchangeable Calcium, Ca | mg/kg | 2 | 0 |
| | Exchangeable Magnesium, Mg | mg/kg | 2 | 0 |

### Mercury (dissolved) in Water

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB197375.001 | Mercury | mg/L | 0.0001 | <0.0001 |

### Mercury in Soil

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB197290.001 | Mercury | mg/kg | 0.05 | <0.05 |
| LB197291.001 | Mercury | mg/kg | 0.05 | <0.05 |
| LB197292.001 | Mercury | mg/kg | 0.05 | <0.05 |
| LB197726.001 | Mercury | mg/kg | 0.05 | <0.05 |

### OC Pesticides in Soil

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB197266.001 | | Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 |
| | | Alpha BHC | mg/kg | 0.1 | <0.1 |
| | | Lindane | mg/kg | 0.1 | <0.1 |
| | | Heptachlor | mg/kg | 0.1 | <0.1 |
| | | Aldrin | mg/kg | 0.1 | <0.1 |
| | | Beta BHC | mg/kg | 0.1 | <0.1 |
| | | Delta BHC | mg/kg | 0.1 | <0.1 |
| | | Heptachlor epoxide | mg/kg | 0.1 | <0.1 |
| | | Alpha Endosulfan | mg/kg | 0.2 | <0.2 |
| | | Gamma Chlordane | mg/kg | 0.1 | <0.1 |
| | | Alpha Chlordane | mg/kg | 0.1 | <0.1 |
| | | 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 |
| | | p,p'-DDT | mg/kg | 0.1 | <0.1 |
| | | Endosulfan sulphate | mg/kg | 0.1 | <0.1 |
| | | Endrin Aldehyde | mg/kg | 0.1 | <0.1 |
| | | Methoxychlor | mg/kg | 0.1 | <0.1 |
| | | Endrin Ketone | mg/kg | 0.1 | <0.1 |
| | | Isodrin | mg/kg | 0.1 | <0.1 |
| | | Mirex | mg/kg | 0.1 | <0.1 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 104 |
| LB197267.001 | | Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 |
| | | Alpha BHC | mg/kg | 0.1 | <0.1 |
| | | Lindane | mg/kg | 0.1 | <0.1 |
| | | Heptachlor | mg/kg | 0.1 | <0.1 |
| | | Aldrin | mg/kg | 0.1 | <0.1 |
| | | Beta BHC | mg/kg | 0.1 | <0.1 |
| | | Delta BHC | mg/kg | 0.1 | <0.1 |
| | | Heptachlor epoxide | mg/kg | 0.1 | <0.1 |
| | | Alpha Endosulfan | mg/kg | 0.2 | <0.2 |
| | | Gamma Chlordane | mg/kg | 0.1 | <0.1 |
| | | Alpha Chlordane | mg/kg | 0.1 | <0.1 |
| | | 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 |
| | | p,p'-DDT | mg/kg | 0.1 | <0.1 |
| | | Endosulfan sulphate | 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.

**OC Pesticides in Soil (continued)** — Method: ME-(AU)-[ENV]AN420

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB197267.001 | | Endrin Aldehyde | mg/kg | 0.1 | <0.1 |
| | | Methoxychlor | mg/kg | 0.1 | <0.1 |
| | | Endrin Ketone | mg/kg | 0.1 | <0.1 |
| | | Isodrin | mg/kg | 0.1 | <0.1 |
| | | Mirex | mg/kg | 0.1 | <0.1 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 119 |
| LB197268.001 | | Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 |
| | | Alpha BHC | mg/kg | 0.1 | <0.1 |
| | | Lindane | mg/kg | 0.1 | <0.1 |
| | | Heptachlor | mg/kg | 0.1 | <0.1 |
| | | Aldrin | mg/kg | 0.1 | <0.1 |
| | | Beta BHC | mg/kg | 0.1 | <0.1 |
| | | Delta BHC | mg/kg | 0.1 | <0.1 |
| | | Heptachlor epoxide | mg/kg | 0.1 | <0.1 |
| | | Alpha Endosulfan | mg/kg | 0.2 | <0.2 |
| | | Gamma Chlordane | mg/kg | 0.1 | <0.1 |
| | | Alpha Chlordane | mg/kg | 0.1 | <0.1 |
| | | 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 |
| | | p,p'-DDT | mg/kg | 0.1 | <0.1 |
| | | Endosulfan sulphate | mg/kg | 0.1 | <0.1 |
| | | Endrin Aldehyde | mg/kg | 0.1 | <0.1 |
| | | Methoxychlor | mg/kg | 0.1 | <0.1 |
| | | Endrin Ketone | mg/kg | 0.1 | <0.1 |
| | | Isodrin | mg/kg | 0.1 | <0.1 |
| | | Mirex | mg/kg | 0.1 | <0.1 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 119 |

**OP Pesticides in Soil** — Method: ME-(AU)-[ENV]AN420

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB197266.001 | | Dichlorvos | mg/kg | 0.5 | <0.5 |
| | | Dimethoate | mg/kg | 0.5 | <0.5 |
| | | Diazinon (Dimpylate) | mg/kg | 0.5 | <0.5 |
| | | Fenitrothion | mg/kg | 0.2 | <0.2 |
| | | Malathion | mg/kg | 0.2 | <0.2 |
| | | Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 0.2 | <0.2 |
| | | Parathion-ethyl (Parathion) | mg/kg | 0.2 | <0.2 |
| | | Bromophos Ethyl | mg/kg | 0.2 | <0.2 |
| | | Methidathion | mg/kg | 0.5 | <0.5 |
| | | Ethion | mg/kg | 0.2 | <0.2 |
| | | Azinphos-methyl (Guthion) | mg/kg | 0.2 | <0.2 |
| | Surrogates | 2-fluorobiphenyl (Surrogate) | % | - | 92 |
| | | d14-p-terphenyl (Surrogate) | % | - | 92 |
| LB197267.001 | | Dichlorvos | mg/kg | 0.5 | <0.5 |
| | | Dimethoate | mg/kg | 0.5 | <0.5 |
| | | Diazinon (Dimpylate) | mg/kg | 0.5 | <0.5 |
| | | Fenitrothion | mg/kg | 0.2 | <0.2 |
| | | Malathion | mg/kg | 0.2 | <0.2 |
| | | Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 0.2 | <0.2 |
| | | Parathion-ethyl (Parathion) | mg/kg | 0.2 | <0.2 |
| | | Bromophos Ethyl | mg/kg | 0.2 | <0.2 |
| | | Methidathion | mg/kg | 0.5 | <0.5 |
| | | Ethion | mg/kg | 0.2 | <0.2 |
| | | Azinphos-methyl (Guthion) | mg/kg | 0.2 | <0.2 |
| | Surrogates | 2-fluorobiphenyl (Surrogate) | % | - | 85 |
| | | d14-p-terphenyl (Surrogate) | % | - | 89 |
| LB197268.001 | | Dichlorvos | mg/kg | 0.5 | <0.5 |
| | | Dimethoate | mg/kg | 0.5 | <0.5 |

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 (continued)** — Method: ME-(AU)-[ENV]AN420

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB197268.001 | | Diazinon (Dimpylate) | mg/kg | 0.5 | <0.5 |
| | | Fenitrothion | mg/kg | 0.2 | <0.2 |
| | | Malathion | mg/kg | 0.2 | <0.2 |
| | | Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 0.2 | <0.2 |
| | | Parathion-ethyl (Parathion) | mg/kg | 0.2 | <0.2 |
| | | Bromophos Ethyl | mg/kg | 0.2 | <0.2 |
| | | Methidathion | mg/kg | 0.5 | <0.5 |
| | | Ethion | mg/kg | 0.2 | <0.2 |
| | | Azinphos-methyl (Guthion) | mg/kg | 0.2 | <0.2 |
| | Surrogates | 2-fluorobiphenyl (Surrogate) | % | - | 94 |
| | | d14-p-terphenyl (Surrogate) | % | - | 92 |

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil** — Method: ME-(AU)-[ENV]AN420

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB197266.001 | | 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) | % | - | 93 |
| | | 2-fluorobiphenyl (Surrogate) | % | - | 92 |
| | | d14-p-terphenyl (Surrogate) | % | - | 92 |
| LB197267.001 | | 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) | % | - | 86 |
| | | 2-fluorobiphenyl (Surrogate) | % | - | 85 |
| | | d14-p-terphenyl (Surrogate) | % | - | 89 |
| LB197268.001 | | 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 |

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 |
|---|---|---|---|---|---|
| LB197268.001 | | 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) | % | - | 93 |
| | | 2-fluorobiphenyl (Surrogate) | % | - | 94 |
| | | d14-p-terphenyl (Surrogate) | % | - | 92 |

## PCBs in Soil

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB197266.001 | | 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 | <1 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 104 |
| LB197267.001 | | 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 | <1 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 119 |
| LB197268.001 | | 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 | <1 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 119 |

## Speciated Phenols in Soil

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB197266.001 | Phenol | mg/kg | 0.5 | <0.5 |
| | 2-methyl phenol (o-cresol) | mg/kg | 0.5 | <0.5 |
| | 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | <1 |
| | 2-chlorophenol | mg/kg | 0.5 | <0.5 |
| | 2,4-dimethylphenol | mg/kg | 0.5 | <0.5 |
| | 2,6-dichlorophenol | mg/kg | 0.5 | <0.5 |
| | 2,4-dichlorophenol | mg/kg | 0.5 | <0.5 |
| | 2,4,6-trichlorophenol | mg/kg | 0.5 | <0.5 |
| | 2-nitrophenol | mg/kg | 0.5 | <0.5 |
| | 4-nitrophenol | mg/kg | 1 | <1 |

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

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

**Speciated Phenols in Soil (continued)** — **Method: ME-(AU)-[ENV]AN420**

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB197266.001 | | 2,4,5-trichlorophenol | mg/kg | 0.5 | <0.5 |
| | | 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | <1 |
| | | Pentachlorophenol | mg/kg | 0.5 | <0.5 |
| | | 2,4-dinitrophenol | mg/kg | 2 | <2 |
| | | 4-chloro-3-methylphenol | mg/kg | 2 | <2 |
| | Surrogates | 2,4,6-Tribromophenol (Surrogate) | % | - | 96 |
| | | d5-phenol (Surrogate) | % | - | 94 |
| LB197267.001 | | Phenol | mg/kg | 0.5 | <0.5 |
| | | 2-methyl phenol (o-cresol) | mg/kg | 0.5 | <0.5 |
| | | 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | <1 |
| | | 2-chlorophenol | mg/kg | 0.5 | <0.5 |
| | | 2,4-dimethylphenol | mg/kg | 0.5 | <0.5 |
| | | 2,6-dichlorophenol | mg/kg | 0.5 | <0.5 |
| | | 2,4-dichlorophenol | mg/kg | 0.5 | <0.5 |
| | | 2,4,6-trichlorophenol | mg/kg | 0.5 | <0.5 |
| | | 2-nitrophenol | mg/kg | 0.5 | <0.5 |
| | | 4-nitrophenol | mg/kg | 1 | <1 |
| | | 2,4,5-trichlorophenol | mg/kg | 0.5 | <0.5 |
| | | 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | <1 |
| | | Pentachlorophenol | mg/kg | 0.5 | <0.5 |
| | | 2,4-dinitrophenol | mg/kg | 2 | <2 |
| | | 4-chloro-3-methylphenol | mg/kg | 2 | <2 |
| | Surrogates | 2,4,6-Tribromophenol (Surrogate) | % | - | 107 |
| | | d5-phenol (Surrogate) | % | - | 102 |
| LB197268.001 | | Phenol | mg/kg | 0.5 | <0.5 |
| | | 2-methyl phenol (o-cresol) | mg/kg | 0.5 | <0.5 |
| | | 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | <1 |
| | | 2-chlorophenol | mg/kg | 0.5 | <0.5 |
| | | 2,4-dimethylphenol | mg/kg | 0.5 | <0.5 |
| | | 2,6-dichlorophenol | mg/kg | 0.5 | <0.5 |
| | | 2,4-dichlorophenol | mg/kg | 0.5 | <0.5 |
| | | 2,4,6-trichlorophenol | mg/kg | 0.5 | <0.5 |
| | | 2-nitrophenol | mg/kg | 0.5 | <0.5 |
| | | 4-nitrophenol | mg/kg | 1 | <1 |
| | | 2,4,5-trichlorophenol | mg/kg | 0.5 | <0.5 |
| | | 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | <1 |
| | | Pentachlorophenol | mg/kg | 0.5 | <0.5 |
| | | 2,4-dinitrophenol | mg/kg | 2 | <2 |
| | | 4-chloro-3-methylphenol | mg/kg | 2 | <2 |
| | Surrogates | 2,4,6-Tribromophenol (Surrogate) | % | - | 77 |
| | | d5-phenol (Surrogate) | % | - | 94 |

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES** — **Method: ME-(AU)-[ENV]AN040/AN320**

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB197287.001 | 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 |
| LB197288.001 | 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 |
| LB197289.001 | Arsenic, As | mg/kg | 1 | <1 |
| | Cadmium, Cd | mg/kg | 0.3 | <0.3 |
| | Chromium, Cr | mg/kg | 0.5 | <0.5 |

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.

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

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB197289.001 | 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 |
| LB197722.001 | 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 |
|---|---|---|---|---|
| LB197279.001 | Arsenic, As | µg/L | 1 | <1 |
| | Cadmium, Cd | µg/L | 0.1 | <0.1 |
| | Chromium, Cr | µg/L | 1 | <1 |
| | Copper, Cu | µg/L | 1 | <1 |
| | Lead, Pb | µg/L | 1 | <1 |
| | Nickel, Ni | µg/L | 1 | <1 |
| | Zinc, Zn | µg/L | 5 | <5 |

### TRH (Total Recoverable Hydrocarbons) in Soil

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB197266.001 | 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 |
| LB197267.001 | 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 |
| LB197268.001 | 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 |
|---|---|---|---|---|---|
| LB197263.001 | Fumigants | 2,2-dichloropropane | mg/kg | 0.1 | <0.1 |
| | | 1,2-dichloropropane | mg/kg | 0.1 | <0.1 |
| | | cis-1,3-dichloropropene | mg/kg | 0.1 | <0.1 |
| | | trans-1,3-dichloropropene | mg/kg | 0.1 | <0.1 |
| | | 1,2-dibromoethane (EDB) | mg/kg | 0.1 | <0.1 |
| | Halogenated Aliphatics | Dichlorodifluoromethane (CFC-12) | mg/kg | 1 | <1 |
| | | Chloromethane | mg/kg | 1 | <1 |
| | | Vinyl chloride (Chloroethene) | mg/kg | 0.1 | <0.1 |
| | | Bromomethane | mg/kg | 1 | <1 |
| | | Chloroethane | mg/kg | 1 | <1 |
| | | Trichlorofluoromethane | mg/kg | 1 | <1 |
| | | Iodomethane | mg/kg | 5 | <5 |
| | | 1,1-dichloroethene | mg/kg | 0.1 | <0.1 |
| | | Dichloromethane (Methylene chloride) | mg/kg | 0.5 | <0.5 |
| | | Allyl chloride | mg/kg | 0.1 | <0.1 |
| | | trans-1,2-dichloroethene | mg/kg | 0.1 | <0.1 |
| | | 1,1-dichloroethane | mg/kg | 0.1 | <0.1 |
| | | cis-1,2-dichloroethene | mg/kg | 0.1 | <0.1 |
| | | Bromochloromethane | mg/kg | 0.1 | <0.1 |
| | | 1,2-dichloroethane | mg/kg | 0.1 | <0.1 |

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Result 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 |
|---|---|---|---|---|---|
| LB197263.001 | Halogenated Aliphatics | 1,1,1-trichloroethane | mg/kg | 0.1 | <0.1 |
| | | 1,1-dichloropropene | mg/kg | 0.1 | <0.1 |
| | | Carbon tetrachloride | mg/kg | 0.1 | <0.1 |
| | | Dibromomethane | mg/kg | 0.1 | <0.1 |
| | | Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | <0.1 |
| | | 1,1,2-trichloroethane | mg/kg | 0.1 | <0.1 |
| | | 1,3-dichloropropane | mg/kg | 0.1 | <0.1 |
| | | Tetrachloroethene (Perchloroethylene,PCE) | mg/kg | 0.1 | <0.1 |
| | | 1,1,1,2-tetrachloroethane | mg/kg | 0.1 | <0.1 |
| | | cis-1,4-dichloro-2-butene | mg/kg | 1 | <1 |
| | | 1,1,2,2-tetrachloroethane | mg/kg | 0.1 | <0.1 |
| | | 1,2,3-trichloropropane | mg/kg | 0.1 | <0.1 |
| | | trans-1,4-dichloro-2-butene | mg/kg | 1 | <1 |
| | | 1,2-dibromo-3-chloropropane | mg/kg | 0.1 | <0.1 |
| | | Hexachlorobutadiene | mg/kg | 0.1 | <0.1 |
| | Halogenated Aromatics | Chlorobenzene | mg/kg | 0.1 | <0.1 |
| | | Bromobenzene | mg/kg | 0.1 | <0.1 |
| | | 2-chlorotoluene | mg/kg | 0.1 | <0.1 |
| | | 4-chlorotoluene | mg/kg | 0.1 | <0.1 |
| | | 1,3-dichlorobenzene | mg/kg | 0.1 | <0.1 |
| | | 1,4-dichlorobenzene | mg/kg | 0.1 | <0.1 |
| | | 1,2-dichlorobenzene | mg/kg | 0.1 | <0.1 |
| | | 1,2,4-trichlorobenzene | mg/kg | 0.1 | <0.1 |
| | | 1,2,3-trichlorobenzene | mg/kg | 0.1 | <0.1 |
| | 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 |
| | | Styrene (Vinyl benzene) | mg/kg | 0.1 | <0.1 |
| | | o-xylene | mg/kg | 0.1 | <0.1 |
| | | Isopropylbenzene (Cumene) | mg/kg | 0.1 | <0.1 |
| | | n-propylbenzene | mg/kg | 0.1 | <0.1 |
| | | 1,3,5-trimethylbenzene | mg/kg | 0.1 | <0.1 |
| | | tert-butylbenzene | mg/kg | 0.1 | <0.1 |
| | | 1,2,4-trimethylbenzene | mg/kg | 0.1 | <0.1 |
| | | sec-butylbenzene | mg/kg | 0.1 | <0.1 |
| | | p-isopropyltoluene | mg/kg | 0.1 | <0.1 |
| | | n-butylbenzene | mg/kg | 0.1 | <0.1 |
| | Nitrogenous Compounds | Acrylonitrile | mg/kg | 0.1 | <0.1 |
| | | 2-nitropropane | mg/kg | 10 | <10 |
| | Oxygenated Compounds | Acetone (2-propanone) | mg/kg | 10 | <10 |
| | | MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | <0.1 |
| | | Vinyl acetate | mg/kg | 10 | <10 |
| | | MEK (2-butanone) | mg/kg | 10 | <10 |
| | | MIBK (4-methyl-2-pentanone) | mg/kg | 1 | <1 |
| | | 2-hexanone (MBK) | mg/kg | 5 | <5 |
| | Polycyclic VOCs | Naphthalene | mg/kg | 0.1 | <0.1 |
| | Sulphonated | Carbon disulfide | mg/kg | 0.5 | <0.5 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | % | - | 110 |
| | | d8-toluene (Surrogate) | % | - | 110 |
| | | Bromofluorobenzene (Surrogate) | % | - | 97 |
| | Totals | Total BTEX | mg/kg | 0.6 | <0.6 |
| | | Total Other Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | <1.8 |
| | | Total Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | <1.8 |
| | Trihalomethanes | Chloroform | mg/kg | 0.1 | <0.1 |
| | | Bromodichloromethane | mg/kg | 0.1 | <0.1 |
| | | Chlorodibromomethane | mg/kg | 0.1 | <0.1 |
| | | Bromoform | mg/kg | 0.1 | <0.1 |
| LB197264.001 | Fumigants | 2,2-dichloropropane | mg/kg | 0.1 | <0.1 |
| | | 1,2-dichloropropane | mg/kg | 0.1 | <0.1 |
| | | cis-1,3-dichloropropene | 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.

VOC's in Soil (continued)

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB197264.001 | Fumigants | trans-1,3-dichloropropene | mg/kg | 0.1 | <0.1 |
| | | 1,2-dibromoethane (EDB) | mg/kg | 0.1 | <0.1 |
| | Halogenated Aliphatics | Dichlorodifluoromethane (CFC-12) | mg/kg | 1 | <1 |
| | | Chloromethane | mg/kg | 1 | <1 |
| | | Vinyl chloride (Chloroethene) | mg/kg | 0.1 | <0.1 |
| | | Bromomethane | mg/kg | 1 | <1 |
| | | Chloroethane | mg/kg | 1 | <1 |
| | | Trichlorofluoromethane | mg/kg | 1 | <1 |
| | | Iodomethane | mg/kg | 5 | <5 |
| | | 1,1-dichloroethene | mg/kg | 0.1 | <0.1 |
| | | Dichloromethane (Methylene chloride) | mg/kg | 0.5 | <0.5 |
| | | Allyl chloride | mg/kg | 0.1 | <0.1 |
| | | trans-1,2-dichloroethene | mg/kg | 0.1 | <0.1 |
| | | 1,1-dichloroethane | mg/kg | 0.1 | <0.1 |
| | | cis-1,2-dichloroethene | mg/kg | 0.1 | <0.1 |
| | | Bromochloromethane | mg/kg | 0.1 | <0.1 |
| | | 1,2-dichloroethane | mg/kg | 0.1 | <0.1 |
| | | 1,1,1-trichloroethane | mg/kg | 0.1 | <0.1 |
| | | 1,1-dichloropropene | mg/kg | 0.1 | <0.1 |
| | | Carbon tetrachloride | mg/kg | 0.1 | <0.1 |
| | | Dibromomethane | mg/kg | 0.1 | <0.1 |
| | | Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | <0.1 |
| | | 1,1,2-trichloroethane | mg/kg | 0.1 | <0.1 |
| | | 1,3-dichloropropane | mg/kg | 0.1 | <0.1 |
| | | Tetrachloroethene (Perchloroethylene,PCE) | mg/kg | 0.1 | <0.1 |
| | | 1,1,1,2-tetrachloroethane | mg/kg | 0.1 | <0.1 |
| | | cis-1,4-dichloro-2-butene | mg/kg | 1 | <1 |
| | | 1,1,2,2-tetrachloroethane | mg/kg | 0.1 | <0.1 |
| | | 1,2,3-trichloropropane | mg/kg | 0.1 | <0.1 |
| | | trans-1,4-dichloro-2-butene | mg/kg | 1 | <1 |
| | | 1,2-dibromo-3-chloropropane | mg/kg | 0.1 | <0.1 |
| | | Hexachlorobutadiene | mg/kg | 0.1 | <0.1 |
| | Halogenated Aromatics | Chlorobenzene | mg/kg | 0.1 | <0.1 |
| | | Bromobenzene | mg/kg | 0.1 | <0.1 |
| | | 2-chlorotoluene | mg/kg | 0.1 | <0.1 |
| | | 4-chlorotoluene | mg/kg | 0.1 | <0.1 |
| | | 1,3-dichlorobenzene | mg/kg | 0.1 | <0.1 |
| | | 1,4-dichlorobenzene | mg/kg | 0.1 | <0.1 |
| | | 1,2-dichlorobenzene | mg/kg | 0.1 | <0.1 |
| | | 1,2,4-trichlorobenzene | mg/kg | 0.1 | <0.1 |
| | | 1,2,3-trichlorobenzene | mg/kg | 0.1 | <0.1 |
| | Monocyclic Aromatic | Benzene | mg/kg | 0.1 | <0.1 |
| | Hydrocarbons | Toluene | mg/kg | 0.1 | <0.1 |
| | | Ethylbenzene | mg/kg | 0.1 | <0.1 |
| | | m/p-xylene | mg/kg | 0.2 | <0.2 |
| | | Styrene (Vinyl benzene) | mg/kg | 0.1 | <0.1 |
| | | o-xylene | mg/kg | 0.1 | <0.1 |
| | | Isopropylbenzene (Cumene) | mg/kg | 0.1 | <0.1 |
| | | n-propylbenzene | mg/kg | 0.1 | <0.1 |
| | | 1,3,5-trimethylbenzene | mg/kg | 0.1 | <0.1 |
| | | tert-butylbenzene | mg/kg | 0.1 | <0.1 |
| | | 1,2,4-trimethylbenzene | mg/kg | 0.1 | <0.1 |
| | | sec-butylbenzene | mg/kg | 0.1 | <0.1 |
| | | p-isopropyltoluene | mg/kg | 0.1 | <0.1 |
| | | n-butylbenzene | mg/kg | 0.1 | <0.1 |
| | Nitrogenous Compounds | Acrylonitrile | mg/kg | 0.1 | <0.1 |
| | | 2-nitropropane | mg/kg | 10 | <10 |
| | Oxygenated Compounds | Acetone (2-propanone) | mg/kg | 10 | <10 |
| | | MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | <0.1 |
| | | Vinyl acetate | mg/kg | 10 | <10 |
| | | MEK (2-butanone) | mg/kg | 10 | <10 |

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.

VOC's in Soil (continued)

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB197264.001 | Oxygenated Compounds | MIBK (4-methyl-2-pentanone) | mg/kg | 1 | <1 |
| | | 2-hexanone (MBK) | mg/kg | 5 | <5 |
| | Polycyclic VOCs | Naphthalene | mg/kg | 0.1 | <0.1 |
| | Sulphonated | Carbon disulfide | mg/kg | 0.5 | <0.5 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | % | - | 111 |
| | | d8-toluene (Surrogate) | % | - | 117 |
| | | Bromofluorobenzene (Surrogate) | % | - | 93 |
| | Totals | Total BTEX | mg/kg | 0.6 | <0.6 |
| | | Total Other Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | <1.8 |
| | | Total Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | <1.8 |
| | Trihalomethanes | Chloroform | mg/kg | 0.1 | <0.1 |
| | | Bromodichloromethane | mg/kg | 0.1 | <0.1 |
| | | Chlorodibromomethane | mg/kg | 0.1 | <0.1 |
| | | Bromoform | mg/kg | 0.1 | <0.1 |
| LB197265.001 | Fumigants | 2,2-dichloropropane | mg/kg | 0.1 | <0.1 |
| | | 1,2-dichloropropane | mg/kg | 0.1 | <0.1 |
| | | cis-1,3-dichloropropene | mg/kg | 0.1 | <0.1 |
| | | trans-1,3-dichloropropene | mg/kg | 0.1 | <0.1 |
| | | 1,2-dibromoethane (EDB) | mg/kg | 0.1 | <0.1 |
| | Halogenated Aliphatics | Dichlorodifluoromethane (CFC-12) | mg/kg | 1 | <1 |
| | | Chloromethane | mg/kg | 1 | <1 |
| | | Vinyl chloride (Chloroethene) | mg/kg | 0.1 | <0.1 |
| | | Bromomethane | mg/kg | 1 | <1 |
| | | Chloroethane | mg/kg | 1 | <1 |
| | | Trichlorofluoromethane | mg/kg | 1 | <1 |
| | | Iodomethane | mg/kg | 5 | <5 |
| | | 1,1-dichloroethene | mg/kg | 0.1 | <0.1 |
| | | Dichloromethane (Methylene chloride) | mg/kg | 0.5 | <0.5 |
| | | Allyl chloride | mg/kg | 0.1 | <0.1 |
| | | trans-1,2-dichloroethene | mg/kg | 0.1 | <0.1 |
| | | 1,1-dichloroethane | mg/kg | 0.1 | <0.1 |
| | | cis-1,2-dichloroethene | mg/kg | 0.1 | <0.1 |
| | | Bromochloromethane | mg/kg | 0.1 | <0.1 |
| | | 1,2-dichloroethane | mg/kg | 0.1 | <0.1 |
| | | 1,1,1-trichloroethane | mg/kg | 0.1 | <0.1 |
| | | 1,1-dichloropropene | mg/kg | 0.1 | <0.1 |
| | | Carbon tetrachloride | mg/kg | 0.1 | <0.1 |
| | | Dibromomethane | mg/kg | 0.1 | <0.1 |
| | | Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | <0.1 |
| | | 1,1,2-trichloroethane | mg/kg | 0.1 | <0.1 |
| | | 1,3-dichloropropane | mg/kg | 0.1 | <0.1 |
| | | Tetrachloroethene (Perchloroethylene,PCE) | mg/kg | 0.1 | <0.1 |
| | | 1,1,1,2-tetrachloroethane | mg/kg | 0.1 | <0.1 |
| | | cis-1,4-dichloro-2-butene | mg/kg | 1 | <1 |
| | | 1,1,2,2-tetrachloroethane | mg/kg | 0.1 | <0.1 |
| | | 1,2,3-trichloropropane | mg/kg | 0.1 | <0.1 |
| | | trans-1,4-dichloro-2-butene | mg/kg | 1 | <1 |
| | | 1,2-dibromo-3-chloropropane | mg/kg | 0.1 | <0.1 |
| | | Hexachlorobutadiene | mg/kg | 0.1 | <0.1 |
| | Halogenated Aromatics | Chlorobenzene | mg/kg | 0.1 | <0.1 |
| | | Bromobenzene | mg/kg | 0.1 | <0.1 |
| | | 2-chlorotoluene | mg/kg | 0.1 | <0.1 |
| | | 4-chlorotoluene | mg/kg | 0.1 | <0.1 |
| | | 1,3-dichlorobenzene | mg/kg | 0.1 | <0.1 |
| | | 1,4-dichlorobenzene | mg/kg | 0.1 | <0.1 |
| | | 1,2-dichlorobenzene | mg/kg | 0.1 | <0.1 |
| | | 1,2,4-trichlorobenzene | mg/kg | 0.1 | <0.1 |
| | | 1,2,3-trichlorobenzene | mg/kg | 0.1 | <0.1 |
| | Monocyclic Aromatic Hydrocarbons | Benzene | mg/kg | 0.1 | <0.1 |
| | | Toluene | mg/kg | 0.1 | <0.1 |
| | | Ethylbenzene | 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.

## VOC's in Soil (continued)

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB197265.001 | Monocyclic Aromatic Hydrocarbons | m/p-xylene | mg/kg | 0.2 | <0.2 |
| | | Styrene (Vinyl benzene) | mg/kg | 0.1 | <0.1 |
| | | o-xylene | mg/kg | 0.1 | <0.1 |
| | | Isopropylbenzene (Cumene) | mg/kg | 0.1 | <0.1 |
| | | n-propylbenzene | mg/kg | 0.1 | <0.1 |
| | | 1,3,5-trimethylbenzene | mg/kg | 0.1 | <0.1 |
| | | tert-butylbenzene | mg/kg | 0.1 | <0.1 |
| | | 1,2,4-trimethylbenzene | mg/kg | 0.1 | <0.1 |
| | | sec-butylbenzene | mg/kg | 0.1 | <0.1 |
| | | p-isopropyltoluene | mg/kg | 0.1 | <0.1 |
| | | n-butylbenzene | mg/kg | 0.1 | <0.1 |
| | Nitrogenous Compounds | Acrylonitrile | mg/kg | 0.1 | <0.1 |
| | | 2-nitropropane | mg/kg | 10 | <10 |
| | Oxygenated Compounds | Acetone (2-propanone) | mg/kg | 10 | <10 |
| | | MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | <0.1 |
| | | Vinyl acetate | mg/kg | 10 | <10 |
| | | MEK (2-butanone) | mg/kg | 10 | <10 |
| | | MIBK (4-methyl-2-pentanone) | mg/kg | 1 | <1 |
| | | 2-hexanone (MBK) | mg/kg | 5 | <5 |
| | Polycyclic VOCs | Naphthalene | mg/kg | 0.1 | <0.1 |
| | Sulphonated | Carbon disulfide | mg/kg | 0.5 | <0.5 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | % | - | 70 |
| | | d8-toluene (Surrogate) | % | - | 71 |
| | | Bromofluorobenzene (Surrogate) | % | - | 80 |
| | Totals | Total BTEX | mg/kg | 0.6 | <0.6 |
| | | Total Other Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | <1.8 |
| | | Total Chlorinated Hydrocarbons VIC EPA* | mg/kg | 1.8 | <1.8 |
| | Trihalomethanes | Chloroform | mg/kg | 0.1 | <0.1 |
| | | Bromodichloromethane | mg/kg | 0.1 | <0.1 |
| | | Chlorodibromomethane | mg/kg | 0.1 | <0.1 |
| | | Bromoform | mg/kg | 0.1 | <0.1 |

## Volatile Petroleum Hydrocarbons in Soil

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB197263.001 | | TRH C6-C9 | mg/kg | 20 | <20 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | % | - | 110 |
| LB197264.001 | | TRH C6-C9 | mg/kg | 20 | <20 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | % | - | 111 |
| LB197265.001 | | TRH C6-C9 | mg/kg | 20 | <20 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | % | - | 70 |

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

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

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

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

### Mercury (dissolved) in Water

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE205109.001 | LB197375.019 | Mercury | µg/L | 0.0001 | -0.0019 | -0.00206 | 200 | 0 |

### Mercury in Soil

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE204712.022 | LB197292.022 | Mercury | mg/kg | 0.05 | <0.05 | <0.05 | 200 | 0 |
| SE204895.010 | LB197290.014 | Mercury | mg/kg | 0.05 | <0.05 | <0.05 | 200 | 0 |
| SE204895.019 | LB197290.024 | Mercury | mg/kg | 0.05 | <0.05 | <0.05 | 200 | 0 |
| SE204895.030 | LB197291.014 | Mercury | mg/kg | 0.05 | <0.05 | <0.05 | 200 | 0 |
| SE204895.040 | LB197291.024 | Mercury | mg/kg | 0.05 | <0.05 | <0.05 | 200 | 0 |
| SE204895.050 | LB197292.014 | Mercury | mg/kg | 0.05 | <0.05 | <0.05 | 200 | 0 |

### Moisture Content

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE204895.010 | LB197269.011 | % Moisture | %w/w | 1 | 19.2 | 19.5 | 35 | 1 |
| SE204895.020 | LB197269.022 | % Moisture | %w/w | 1 | 3.6 | 5.4 | 52 | 40 |
| SE204895.030 | LB197270.011 | % Moisture | %w/w | 1 | 3.9 | 4.2 | 55 | 8 |
| SE204895.040 | LB197270.022 | % Moisture | %w/w | 1 | 10.5 | 10.4 | 40 | 1 |
| SE204895.050 | LB197271.011 | % Moisture | %w/w | 1 | 15.7 | 14.2 | 37 | 10 |
| SE204895.055 | LB197271.017 | % 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 % |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.047 | LB197268.020 | | Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Alpha BHC | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Lindane | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Heptachlor | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Aldrin | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Beta BHC | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Delta BHC | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Heptachlor epoxide | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | o,p'-DDE | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Alpha Endosulfan | mg/kg | 0.2 | <0.2 | 0 | 200 | 0 |
| | | | Gamma Chlordane | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Alpha Chlordane | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | trans-Nonachlor | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | p,p'-DDE | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Dieldrin | mg/kg | 0.2 | <0.2 | 0 | 200 | 0 |
| | | | Endrin | mg/kg | 0.2 | <0.2 | 0 | 200 | 0 |
| | | | o,p'-DDD | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | o,p'-DDT | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Beta Endosulfan | mg/kg | 0.2 | <0.2 | 0 | 200 | 0 |
| | | | p,p'-DDD | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | p,p'-DDT | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Endosulfan sulphate | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Endrin Aldehyde | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Methoxychlor | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Endrin Ketone | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Isodrin | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Mirex | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Total CLP OC Pesticides | mg/kg | 1 | <1 | 0 | 200 | 0 |
| | | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0.19 | 0.175 | 30 | 6 |

### OP Pesticides in Soil

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE204895.010 | LB197266.014 | Dichlorvos | mg/kg | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Dimethoate | mg/kg | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Diazinon (Dimpylate) | mg/kg | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Fenitrothion | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | Malathion | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |

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

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

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

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

## OP Pesticides in Soil (continued)

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.010 | LB197266.014 | | Parathion-ethyl (Parathion) | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Bromophos Ethyl | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Methidathion | mg/kg | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Ethion | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Azinphos-methyl (Guthion) | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Total OP Pesticides* | mg/kg | 1.7 | <1.7 | <1.7 | 200 | 0 |
| | | Surrogates | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 1 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 3 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.010 | LB197266.014 | | 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 | 200 | 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 | <0.1 | <0.1 | 200 | 0 |
| | | | Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(ghi)perylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=0 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | mg/kg | 0.3 | <0.3 | <0.3 | 134 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | mg/kg | 0.2 | <0.2 | <0.2 | 175 | 0 |
| | | | Total PAH (18) | mg/kg | 0.8 | <0.8 | <0.8 | 200 | 0 |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 0 |
| | | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 1 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 3 |
| SE204895.018 | LB197266.028 | | Naphthalene | mg/kg | 0.1 | <0.1 | 0.0005299636 | 200 | 0 |
| | | | 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | 0.0004484725 | 200 | 0 |
| | | | 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Acenaphthylene | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Acenaphthene | mg/kg | 0.1 | <0.1 | 0.0003011095 | 200 | 0 |
| | | | Fluorene | mg/kg | 0.1 | <0.1 | 0.0001665583 | 200 | 0 |
| | | | Phenanthrene | mg/kg | 0.1 | <0.1 | 0.0015879342 | 200 | 0 |
| | | | Anthracene | mg/kg | 0.1 | <0.1 | 0.0016100603 | 200 | 0 |
| | | | Fluoranthene | mg/kg | 0.1 | <0.1 | 0.0018708452 | 200 | 0 |
| | | | Pyrene | mg/kg | 0.1 | <0.1 | 0.0022375675 | 200 | 0 |
| | | | Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | 0.0092731157 | 200 | 0 |
| | | | Chrysene | mg/kg | 0.1 | <0.1 | 0.0094613709 | 200 | 0 |
| | | | Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | 0.0066895609 | 200 | 0 |
| | | | Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | 0.0047920463 | 200 | 0 |
| | | | Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | 0.0003329585 | 200 | 0 |
| | | | Benzo(ghi)perylene | mg/kg | 0.1 | <0.1 | 0.0016349303 | 200 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=0 | mg/kg | 0.2 | <0.2 | 0 | 200 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | mg/kg | 0.3 | <0.3 | 0.242 | 134 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | mg/kg | 0.2 | <0.2 | 0.121 | 175 | 0 |
| | | | Total PAH (18) | mg/kg | 0.8 | <0.8 | 0 | 200 | 0 |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.4 | 0.4162835219 | 30 | 1 |
| | | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4409667506 | 30 | 0 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.5 | 0.4206287602 | 30 | 11 |

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

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

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

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

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)** — **Method: ME-(AU)-[ENV]AN420**

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.030 | LB197267.014 | | 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 | 200 | 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 | <0.1 | <0.1 | 200 | 0 |
| | | | Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(ghi)perylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=0 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | mg/kg | 0.3 | <0.3 | <0.3 | 134 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | mg/kg | 0.2 | <0.2 | <0.2 | 175 | 0 |
| | | | Total PAH (18) | mg/kg | 0.8 | <0.8 | <0.8 | 200 | 0 |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.5 | 0.5 | 30 | 3 |
| | | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 9 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 2 |
| SE204895.040 | LB197267.024 | | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(ghi)perylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=0 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | mg/kg | 0.3 | <0.3 | <0.3 | 134 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | mg/kg | 0.2 | <0.2 | <0.2 | 175 | 0 |
| | | | Total PAH (18) | mg/kg | 0.8 | <0.8 | <0.8 | 200 | 0 |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.5 | 0.5 | 30 | 0 |
| | | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 8 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 2 |
| SE204895.050 | LB197268.014 | | 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 | 200 | 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 | <0.1 | <0.1 | 200 | 0 |
| | | | Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 198 | 0 |
| | | | Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |

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

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

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

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

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

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.050 | LB197268.014 | | Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 148 | 0 |
| | | | Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(ghi)perylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=0 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | mg/kg | 0.3 | <0.3 | <0.3 | 134 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | mg/kg | 0.2 | <0.2 | <0.2 | 175 | 0 |
| | | | Total PAH (18) | mg/kg | 0.8 | <0.8 | <0.8 | 200 | 0 |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 0 |
| | | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 1 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 1 |
| SE204895.054 | LB197268.019 | | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(ghi)perylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=0 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | mg/kg | 0.3 | <0.3 | <0.3 | 134 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | mg/kg | 0.2 | <0.2 | <0.2 | 175 | 0 |
| | | | Total PAH (18) | mg/kg | 0.8 | <0.8 | <0.8 | 200 | 0 |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 4 |
| | | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 8 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | 30 | 2 |

## PCBs in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.047 | LB197268.020 | | 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 | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0 | 0.175 | 30 | 6 |

## pH in soil (1:5)

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE204855.003 | LB197395.016 | pH | pH Units | 0.1 | 8.1 | 8.1 | 31 | 0 |

## Speciated Phenols in Soil

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

| Original | Duplicate | Parameter | Units | LOR |
|---|---|---|---|---|

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

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

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

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

## Speciated Phenols in Soil (continued)

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.049 | LB197268.020 | | Phenol | mg/kg | 0.5 | <0.5 | 0 | 200 | 0 |
| | | | 2-methyl phenol (o-cresol) | mg/kg | 0.5 | <0.5 | 0 | 200 | 0 |
| | | | 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | <1 | 0 | 200 | 0 |
| | | | Total Cresol | mg/kg | 1.5 | <1.5 | 0 | 200 | 0 |
| | | | 2-chlorophenol | mg/kg | 0.5 | <0.5 | 0 | 200 | 0 |
| | | | 2,4-dimethylphenol | mg/kg | 0.5 | <0.5 | 0 | 200 | 0 |
| | | | 2,6-dichlorophenol | mg/kg | 0.5 | <0.5 | 0 | 200 | 0 |
| | | | 2,4-dichlorophenol | mg/kg | 0.5 | <0.5 | 0 | 200 | 0 |
| | | | 2,4,6-trichlorophenol | mg/kg | 0.5 | <0.5 | 0 | 200 | 0 |
| | | | 2-nitrophenol | mg/kg | 0.5 | <0.5 | 0 | 200 | 0 |
| | | | 4-nitrophenol | mg/kg | 1 | <1 | 0 | 200 | 0 |
| | | | 2,4,5-trichlorophenol | mg/kg | 0.5 | <0.5 | 0 | 200 | 0 |
| | | | 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | <1 | 0 | 200 | 0 |
| | | | Pentachlorophenol | mg/kg | 0.5 | <0.5 | 0 | 200 | 0 |
| | | | 2,4-dinitrophenol | mg/kg | 2 | <2 | 0 | 200 | 0 |
| | | | 4-chloro-3-methylphenol | mg/kg | 2 | <2 | 0 | 200 | 0 |
| | | Surrogates | 2,4,6-Tribromophenol (Surrogate) | mg/kg | - | 5.4 | 5.59 | 30 | 4 |
| | | | d5-phenol (Surrogate) | mg/kg | - | 1.7 | 2.11 | 30 | 22 |
| | LB197268.021 | | Phenol | mg/kg | 0.5 | NVL | NVL | NVL | NVL |
| | | | 2-methyl phenol (o-cresol) | mg/kg | 0.5 | NVL | NVL | NVL | NVL |
| | | | 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | NVL | NVL | NVL | NVL |
| | | | Total Cresol | mg/kg | 1.5 | NVL | NVL | NVL | NVL |
| | | | 2-chlorophenol | mg/kg | 0.5 | NVL | NVL | NVL | NVL |
| | | | 2,4-dimethylphenol | mg/kg | 0.5 | NVL | NVL | NVL | NVL |
| | | | 2,6-dichlorophenol | mg/kg | 0.5 | NVL | NVL | NVL | NVL |
| | | | 2,4-dichlorophenol | mg/kg | 0.5 | NVL | NVL | NVL | NVL |
| | | | 2,4,6-trichlorophenol | mg/kg | 0.5 | NVL | NVL | NVL | NVL |
| | | | 2-nitrophenol | mg/kg | 0.5 | NVL | NVL | NVL | NVL |
| | | | 4-nitrophenol | mg/kg | 1 | NVL | NVL | NVL | NVL |
| | | | 2,4,5-trichlorophenol | mg/kg | 0.5 | NVL | NVL | NVL | NVL |
| | | | 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | NVL | NVL | NVL | NVL |
| | | | Pentachlorophenol | mg/kg | 0.5 | NVL | NVL | NVL | NVL |
| | | | 2,4-dinitrophenol | mg/kg | 2 | NVL | NVL | NVL | NVL |
| | | | 4-chloro-3-methylphenol | mg/kg | 2 | NVL | NVL | NVL | NVL |
| | | Surrogates | 2,4,6-Tribromophenol (Surrogate) | mg/kg | - | NVL | NVL | NVL | NVL |
| | | | d5-phenol (Surrogate) | mg/kg | - | 1.7 | 2.11 | 30 | 22 |

## 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 % |
|---|---|---|---|---|---|---|---|---|
| SE204712.022 | LB197289.022 | Arsenic, As | mg/kg | 1 | 3 | 3 | 61 | 16 |
| | | Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | Chromium, Cr | mg/kg | 0.5 | 12 | 12 | 34 | 1 |
| | | Copper, Cu | mg/kg | 0.5 | 2.5 | 1.9 | 53 | 24 |
| | | Nickel, Ni | mg/kg | 0.5 | 0.9 | 0.8 | 88 | 13 |
| | | Lead, Pb | mg/kg | 1 | 12 | 12 | 39 | 2 |
| | | Zinc, Zn | mg/kg | 2 | 4.9 | 4.0 | 75 | 19 |
| SE204895.010 | LB197287.014 | Arsenic, As | mg/kg | 1 | <1 | <1 | 173 | 0 |
| | | Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | Chromium, Cr | mg/kg | 0.5 | 1.7 | 1.7 | 59 | 2 |
| | | Copper, Cu | mg/kg | 0.5 | 1.3 | 1.8 | 63 | 34 |
| | | Nickel, Ni | mg/kg | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Lead, Pb | mg/kg | 1 | 2 | 3 | 67 | 39 |
| | | Zinc, Zn | mg/kg | 2 | 33 | 44 | 35 | 28 |
| SE204895.019 | LB197287.024 | Arsenic, As | mg/kg | 1 | <1 | 1 | 123 | 18 |
| | | Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | Chromium, Cr | mg/kg | 0.5 | 2.8 | 1.8 | 52 | 43 |
| | | Copper, Cu | mg/kg | 0.5 | 11 | 14 | 34 | 24 |
| | | Nickel, Ni | mg/kg | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Lead, Pb | mg/kg | 1 | 18 | 21 | 35 | 16 |
| | | Zinc, Zn | mg/kg | 2 | 170 | 170 | 31 | 1 |
| SE204895.030 | LB197288.014 | Arsenic, As | mg/kg | 1 | <1 | <1 | 143 | 0 |

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

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

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

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

### 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 % |
|---|---|---|---|---|---|---|---|---|
| SE204895.030 | LB197288.014 | Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | Chromium, Cr | mg/kg | 0.5 | 1.9 | 2.3 | 54 | 20 |
| | | Copper, Cu | mg/kg | 0.5 | 3.5 | 11 | 37 | 106 ② |
| | | Nickel, Ni | mg/kg | 0.5 | 0.8 | 1.2 | 80 | 49 |
| | | Lead, Pb | mg/kg | 1 | 6 | 11 | 42 | 48 ② |
| | | Zinc, Zn | mg/kg | 2 | 69 | 110 | 32 | 42 ② |
| SE204895.040 | LB197288.024 | Arsenic, As | mg/kg | 1 | 72 | 60 | 32 | 17 |
| | | Cadmium, Cd | mg/kg | 0.3 | 0.9 | 1.9 | 52 | 71 ② |
| | | Chromium, Cr | mg/kg | 0.5 | 32 | 36 | 31 | 9 |
| | | Copper, Cu | mg/kg | 0.5 | 620 | 710 | 30 | 13 |
| | | Nickel, Ni | mg/kg | 0.5 | 7.2 | 16 | 34 | 75 ② |
| | | Lead, Pb | mg/kg | 1 | 1000 | 1200 | 30 | 17 |
| | | Zinc, Zn | mg/kg | 2 | 16000 | 13000 | 30 | 20 |
| SE204895.050 | LB197289.014 | Arsenic, As | mg/kg | 1 | 3 | 2 | 69 | 16 |
| | | Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | Chromium, Cr | mg/kg | 0.5 | 5.2 | 12 | 36 | 79 ② |
| | | Copper, Cu | mg/kg | 0.5 | 8.6 | 18 | 34 | 70 ② |
| | | Nickel, Ni | mg/kg | 0.5 | 3.3 | 5.4 | 42 | 49 ② |
| | | Lead, Pb | mg/kg | 1 | 16 | 39 | 34 | 83 ② |
| | | Zinc, Zn | mg/kg | 2 | 340 | 690 | 30 | 68 ② |

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

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE204886.003 | LB197279.014 | Copper, Cu | µg/L | 1 | 11 | 11 | 24 | 0 |
| SE205052.003 | LB197279.023 | Arsenic, As | µg/L | 1 | <10 | <10 | 83 | 0 |
| | | Cadmium, Cd | µg/L | 0.1 | <1.0 | <1.0 | 200 | 0 |
| | | Chromium, Cr | µg/L | 1 | <10 | <10 | 141 | 0 |
| | | Copper, Cu | µg/L | 1 | <10 | <10 | 200 | 0 |
| | | Lead, Pb | µg/L | 1 | <10 | <10 | 200 | 0 |
| | | Nickel, Ni | µg/L | 1 | <10 | <10 | 26 | 0 |
| | | Zinc, Zn | µg/L | 5 | <50 | <50 | 200 | 0 |

### TRH (Total Recoverable Hydrocarbons) in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.010 | LB197266.014 | | 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 |
| | | | 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 |
| SE204895.030 | LB197267.014 | | 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 |
| | | | 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 |
| SE204895.040 | LB197267.024 | | TRH C10-C14 | mg/kg | 20 | <20 | <20 | 200 | 0 |
| | | | TRH C15-C28 | mg/kg | 45 | <45 | <45 | 200 | 0 |
| | | | TRH C29-C36 | mg/kg | 45 | <45 | <45 | 200 | 0 |
| | | | TRH C37-C40 | mg/kg | 100 | <100 | <100 | 200 | 0 |
| | | | TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | 200 | 0 |
| | | | TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | <210 | 200 | 0 |
| | | TRH F Bands | TRH >C10-C16 | mg/kg | 25 | <25 | <25 | 200 | 0 |
| | | | TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | <25 | <25 | 200 | 0 |

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

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

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

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

**TRH (Total Recoverable Hydrocarbons) in Soil (continued)** — Method: ME-(AU)-[ENV]AN403

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.040 | LB197267.024 | TRH F Bands | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | 200 | 0 |
| | | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | 200 | 0 |
| SE204895.050 | LB197268.014 | | 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 |
| | | | 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 |
| SE204895.054 | LB197268.019 | | TRH C10-C14 | mg/kg | 20 | <20 | <20 | 200 | 0 |
| | | | TRH C15-C28 | mg/kg | 45 | <45 | <45 | 200 | 0 |
| | | | TRH C29-C36 | mg/kg | 45 | <45 | <45 | 200 | 0 |
| | | | TRH C37-C40 | mg/kg | 100 | <100 | <100 | 200 | 0 |
| | | | TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | 200 | 0 |
| | | | TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | <210 | 200 | 0 |
| | | TRH F Bands | TRH >C10-C16 | mg/kg | 25 | <25 | <25 | 200 | 0 |
| | | | TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | <25 | <25 | 200 | 0 |
| | | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | 200 | 0 |
| | | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | 200 | 0 |

**VOC's in Soil** — Method: ME-(AU)-[ENV]AN433

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.010 | LB197263.014 | Monocyclic | Benzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Aromatic | Toluene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 8.6 | 8.9 | 50 | 3 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 9.1 | 9.3 | 50 | 3 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.0 | 7.2 | 50 | 3 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | | Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | 200 | 0 |
| SE204895.020 | LB197263.025 | Monocyclic | Benzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Aromatic | Toluene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 8.9 | 9.0 | 50 | 1 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 9.5 | 9.6 | 50 | 1 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.3 | 7.3 | 50 | 1 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | | Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | 200 | 0 |
| SE204895.030 | LB197264.014 | Monocyclic | Benzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Aromatic | 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 | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 9.3 | 9.9 | 50 | 6 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 10.3 | 10.8 | 50 | 6 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.8 | 8.1 | 50 | 4 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | | Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | 200 | 0 |
| SE204895.040 | LB197264.024 | Monocyclic | Benzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Aromatic | Toluene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |

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

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

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

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

## VOC's in Soil (continued)

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.040 | LB197264.024 | Monocyclic | o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 8.7 | 8.5 | 50 | 1 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 9.4 | 9.2 | 50 | 2 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.3 | 6.9 | 50 | 5 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | | Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | 200 | 0 |
| SE204895.049 | LB197265.024 | Monocyclic | Benzene | mg/kg | 0.1 | <0.1 | 0.0024195432 | 200 | 0 |
| | | Aromatic | Toluene | mg/kg | 0.1 | <0.1 | 0.0456239071 | 200 | 0 |
| | | | Ethylbenzene | mg/kg | 0.1 | <0.1 | 0.0062490714 | 200 | 0 |
| | | | m/p-xylene | mg/kg | 0.2 | <0.2 | 0.0108646902 | 200 | 0 |
| | | | o-xylene | mg/kg | 0.1 | <0.1 | 0.0039112541 | 200 | 0 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | 0.0040727559 | 200 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 7.5 | 11.1185133392 | 50 | 39 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 7.0 | 11.1805813918 | 50 | 46 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.5 | 9.4258994085 | 50 | 23 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | <0.3 | 0.0147759444 | 200 | 0 |
| | | | Total BTEX | mg/kg | 0.6 | <0.6 | 0 | 200 | 0 |
| SE204895.054 | LB197265.022 | Monocyclic | Benzene | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | Aromatic | Toluene | mg/kg | 0.1 | <0.1 | 0.0124763241 | 200 | 0 |
| | | | Ethylbenzene | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | m/p-xylene | mg/kg | 0.2 | <0.2 | 0 | 200 | 0 |
| | | | o-xylene | mg/kg | 0.1 | <0.1 | 0.0043138765 | 200 | 0 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 10.6 | 7.6926079554 | 50 | 32 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 10.4 | 6.6342398878 | 50 | 44 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 9.0 | 7.5469580696 | 50 | 17 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | <0.3 | 0.0043138765 | 200 | 0 |
| | | | Total BTEX | mg/kg | 0.6 | <0.6 | 0 | 200 | 0 |

## Volatile Petroleum Hydrocarbons in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.010 | LB197263.014 | | 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 | - | 8.6 | 8.9 | 30 | 3 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 9.1 | 9.3 | 30 | 3 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.0 | 7.2 | 30 | 3 |
| | | 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 |
| SE204895.020 | LB197263.025 | | 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 | - | 8.9 | 9.0 | 30 | 1 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 9.5 | 9.6 | 30 | 1 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.3 | 7.3 | 30 | 1 |
| | | 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 |
| SE204895.030 | LB197264.014 | | TRH C6-C10 | mg/kg | 25 | <25 | <25 | 200 | 0 |
| | | | TRH C6-C9 | mg/kg | 20 | <20 | <20 | 200 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 9.3 | 9.9 | 30 | 6 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 10.3 | 10.8 | 30 | 6 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.8 | 8.1 | 30 | 4 |
| | | 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 |
| SE204895.040 | LB197264.024 | | 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 | - | 8.7 | 8.5 | 30 | 1 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 9.4 | 9.2 | 30 | 2 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.3 | 6.9 | 30 | 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 |
| SE204895.049 | LB197265.024 | | TRH C6-C10 | mg/kg | 25 | <25 | 1.0772861554 | 200 | 0 |

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

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

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

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

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.049 | LB197265.024 | | TRH C6-C9 | mg/kg | 20 | <20 | 1.0163262062 | 200 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 7.5 | 11.1185133392 | 30 | 39 † |
| | | | d8-toluene (Surrogate) | mg/kg | - | 7.0 | 11.1805813918 | 30 | 46 † |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.5 | 9.4258994085 | 30 | 23 |
| | | VPH F Bands | Benzene (F0) | mg/kg | 0.1 | <0.1 | 0.0024195432 | 200 | 0 |
| | | | TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | <25 | 1.0772861554 | 200 | 0 |
| SE204895.054 | LB197265.022 | | TRH C6-C10 | mg/kg | 25 | <25 | 1.0154704952 | 200 | 0 |
| | | | TRH C6-C9 | mg/kg | 20 | <20 | 1.0933151561 | 200 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 10.6 | 7.6926079554 | 30 | 32 † |
| | | | d8-toluene (Surrogate) | mg/kg | - | 10.4 | 6.6342398878 | 30 | 44 ⓘ |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 9.0 | 7.5469580696 | 30 | 17 |
| | | VPH F Bands | Benzene (F0) | mg/kg | 0.1 | <0.1 | 0 | 200 | 0 |
| | | | TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | <25 | 1.0154704952 | 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]AN312

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB197290.002 | Mercury | mg/kg | 0.05 | 0.18 | 0.2 | 70 - 130 | 89 |
| LB197291.002 | Mercury | mg/kg | 0.05 | 0.17 | 0.2 | 70 - 130 | 84 |
| LB197292.002 | Mercury | mg/kg | 0.05 | 0.17 | 0.2 | 70 - 130 | 83 |
| LB197726.002 | Mercury | mg/kg | 0.05 | 0.17 | 0.2 | 70 - 130 | 86 |

## OC Pesticides in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB197266.002 | | Heptachlor | mg/kg | 0.1 | 0.3 | 0.2 | 60 - 140 | 128 |
| | | Aldrin | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 122 |
| | | Delta BHC | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 119 |
| | | Dieldrin | mg/kg | 0.2 | 0.2 | 0.2 | 60 - 140 | 124 |
| | | Endrin | mg/kg | 0.2 | 0.2 | 0.2 | 60 - 140 | 124 |
| | | p,p'-DDT | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 122 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0.15 | 0.15 | 40 - 130 | 101 |
| LB197267.002 | | Heptachlor | mg/kg | 0.1 | 0.3 | 0.2 | 60 - 140 | 139 |
| | | Aldrin | mg/kg | 0.1 | 0.3 | 0.2 | 60 - 140 | 128 |
| | | Delta BHC | mg/kg | 0.1 | 0.3 | 0.2 | 60 - 140 | 126 |
| | | Dieldrin | mg/kg | 0.2 | 0.2 | 0.2 | 60 - 140 | 125 |
| | | Endrin | mg/kg | 0.2 | 0.3 | 0.2 | 60 - 140 | 128 |
| | | p,p'-DDT | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 119 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0.16 | 0.15 | 40 - 130 | 109 |
| LB197268.002 | | Heptachlor | mg/kg | 0.1 | 0.3 | 0.2 | 60 - 140 | 139 |
| | | Aldrin | mg/kg | 0.1 | 0.3 | 0.2 | 60 - 140 | 128 |
| | | Delta BHC | mg/kg | 0.1 | 0.3 | 0.2 | 60 - 140 | 126 |
| | | Dieldrin | mg/kg | 0.2 | 0.2 | 0.2 | 60 - 140 | 125 |
| | | Endrin | mg/kg | 0.2 | 0.3 | 0.2 | 60 - 140 | 128 |
| | | p,p'-DDT | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 119 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0.16 | 0.15 | 40 - 130 | 109 |

## OP Pesticides in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB197266.002 | | Dichlorvos | mg/kg | 0.5 | 1.7 | 2 | 60 - 140 | 85 |
| | | Diazinon (Dimpylate) | mg/kg | 0.5 | 2.2 | 2 | 60 - 140 | 110 |
| | | Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 0.2 | 2.0 | 2 | 60 - 140 | 102 |
| | | Ethion | mg/kg | 0.2 | 1.9 | 2 | 60 - 140 | 96 |
| | Surrogates | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 82 |
| | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 75 |
| LB197267.002 | | Dichlorvos | mg/kg | 0.5 | 1.5 | 2 | 60 - 140 | 75 |
| | | Diazinon (Dimpylate) | mg/kg | 0.5 | 1.6 | 2 | 60 - 140 | 78 |
| | | Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 0.2 | 1.6 | 2 | 60 - 140 | 79 |
| | | Ethion | mg/kg | 0.2 | 1.4 | 2 | 60 - 140 | 71 |
| | Surrogates | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 86 |
| | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 79 |
| LB197268.002 | | Dichlorvos | mg/kg | 0.5 | 1.7 | 2 | 60 - 140 | 86 |
| | | Diazinon (Dimpylate) | mg/kg | 0.5 | 1.9 | 2 | 60 - 140 | 96 |
| | | Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 0.2 | 1.9 | 2 | 60 - 140 | 97 |
| | | Ethion | mg/kg | 0.2 | 1.7 | 2 | 60 - 140 | 87 |
| | Surrogates | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 89 |
| | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 79 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB197266.002 | | Naphthalene | mg/kg | 0.1 | 4.1 | 4 | 60 - 140 | 103 |
| | | Acenaphthylene | mg/kg | 0.1 | 4.1 | 4 | 60 - 140 | 103 |
| | | Acenaphthene | mg/kg | 0.1 | 4.3 | 4 | 60 - 140 | 106 |
| | | Phenanthrene | mg/kg | 0.1 | 4.3 | 4 | 60 - 140 | 106 |
| | | Anthracene | mg/kg | 0.1 | 4.1 | 4 | 60 - 140 | 103 |
| | | Fluoranthene | mg/kg | 0.1 | 4.2 | 4 | 60 - 140 | 105 |
| | | Pyrene | mg/kg | 0.1 | 4.3 | 4 | 60 - 140 | 108 |
| | | Benzo(a)pyrene | mg/kg | 0.1 | 4.0 | 4 | 60 - 140 | 99 |
| | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 78 |
| | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 82 |

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 Soil (continued)

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB197266.002 | Surrogates | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 75 |
| LB197267.002 | | Naphthalene | mg/kg | 0.1 | 4.1 | 4 | 60 - 140 | 102 |
| | | Acenaphthylene | mg/kg | 0.1 | 4.2 | 4 | 60 - 140 | 104 |
| | | Acenaphthene | mg/kg | 0.1 | 4.5 | 4 | 60 - 140 | 112 |
| | | Phenanthrene | mg/kg | 0.1 | 4.4 | 4 | 60 - 140 | 109 |
| | | Anthracene | mg/kg | 0.1 | 4.2 | 4 | 60 - 140 | 105 |
| | | Fluoranthene | mg/kg | 0.1 | 4.1 | 4 | 60 - 140 | 101 |
| | | Pyrene | mg/kg | 0.1 | 4.2 | 4 | 60 - 140 | 105 |
| | | Benzo(a)pyrene | mg/kg | 0.1 | 3.8 | 4 | 60 - 140 | 96 |
| | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 82 |
| | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 86 |
| | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 79 |
| LB197268.002 | | Naphthalene | mg/kg | 0.1 | 4.1 | 4 | 60 - 140 | 102 |
| | | Acenaphthylene | mg/kg | 0.1 | 4.1 | 4 | 60 - 140 | 103 |
| | | Acenaphthene | mg/kg | 0.1 | 4.2 | 4 | 60 - 140 | 106 |
| | | Phenanthrene | mg/kg | 0.1 | 4.2 | 4 | 60 - 140 | 105 |
| | | Anthracene | mg/kg | 0.1 | 4.2 | 4 | 60 - 140 | 104 |
| | | Fluoranthene | mg/kg | 0.1 | 4.0 | 4 | 60 - 140 | 100 |
| | | Pyrene | mg/kg | 0.1 | 4.2 | 4 | 60 - 140 | 105 |
| | | Benzo(a)pyrene | mg/kg | 0.1 | 3.9 | 4 | 60 - 140 | 97 |
| | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 81 |
| | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 89 |
| | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 79 |

### PCBs in Soil

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

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB197266.002 | Arochlor 1260 | mg/kg | 0.2 | 0.4 | 0.4 | 60 - 140 | 100 |
| LB197267.002 | Arochlor 1260 | mg/kg | 0.2 | 0.4 | 0.4 | 60 - 140 | 100 |
| LB197268.002 | Arochlor 1260 | mg/kg | 0.2 | 0.4 | 0.4 | 60 - 140 | 100 |

### pH in soil (1:5)

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

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB197395.003 | pH | pH Units | 0.1 | 7.4 | 7.415 | 98 - 102 | 100 |

### Speciated Phenols in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB197266.002 | | Phenol | mg/kg | 0.5 | 0.9 | 1 | 70 - 130 | 89 |
| | | 2,4-dichlorophenol | mg/kg | 0.5 | 0.8 | 1 | 70 - 130 | 84 |
| | | 2,4,6-trichlorophenol | mg/kg | 0.5 | 0.9 | 1 | 70 - 130 | 86 |
| | | Pentachlorophenol | mg/kg | 0.5 | 1.0 | 1 | 70 - 130 | 104 |
| | Surrogates | 2,4,6-Tribromophenol (Surrogate) | mg/kg | - | 5.5 | 5 | 40 - 130 | 110 |
| | | d5-phenol (Surrogate) | mg/kg | - | 2.0 | 2 | 40 - 130 | 98 |
| LB197267.002 | | Phenol | mg/kg | 0.5 | 1.3 | 1 | 70 - 130 | 127 |
| | | 2,4-dichlorophenol | mg/kg | 0.5 | 1.2 | 1 | 70 - 130 | 119 |
| | | 2,4,6-trichlorophenol | mg/kg | 0.5 | 1.3 | 1 | 70 - 130 | 127 |
| | | Pentachlorophenol | mg/kg | 0.5 | 1.1 | 1 | 70 - 130 | 105 |
| | Surrogates | 2,4,6-Tribromophenol (Surrogate) | mg/kg | - | 5.1 | 5 | 40 - 130 | 101 |
| | | d5-phenol (Surrogate) | mg/kg | - | 2.0 | 2 | 40 - 130 | 98 |
| LB197268.002 | | Phenol | mg/kg | 0.5 | 1.0 | 1 | 70 - 130 | 98 |
| | | 2,4-dichlorophenol | mg/kg | 0.5 | 1.0 | 1 | 70 - 130 | 99 |
| | | 2,4,6-trichlorophenol | mg/kg | 0.5 | 0.8 | 1 | 70 - 130 | 78 |
| | | Pentachlorophenol | mg/kg | 0.5 | 0.7 | 1 | 70 - 130 | 70 |
| | Surrogates | 2,4,6-Tribromophenol (Surrogate) | mg/kg | - | 4.0 | 5 | 40 - 130 | 81 |
| | | d5-phenol (Surrogate) | mg/kg | - | 2.0 | 2 | 40 - 130 | 98 |

### 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 % |
|---|---|---|---|---|---|---|---|
| LB197287.002 | Arsenic, As | mg/kg | 1 | 340 | 318.22 | 80 - 120 | 108 |
| | Cadmium, Cd | mg/kg | 0.3 | 5.2 | 5.41 | 80 - 120 | 96 |
| | Chromium, Cr | mg/kg | 0.5 | 33 | 38.31 | 80 - 120 | 86 |
| | Copper, Cu | mg/kg | 0.5 | 300 | 290 | 80 - 120 | 104 |

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

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

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

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

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB197287.002 | Nickel, Ni | mg/kg | 0.5 | 180 | 187 | 80 - 120 | 98 |
| | Lead, Pb | mg/kg | 1 | 100 | 89.9 | 80 - 120 | 112 |
| | Zinc, Zn | mg/kg | 2 | 270 | 273 | 80 - 120 | 101 |
| LB197288.002 | Arsenic, As | mg/kg | 1 | 330 | 318.22 | 80 - 120 | 105 |
| | Cadmium, Cd | mg/kg | 0.3 | 5.2 | 5.41 | 80 - 120 | 96 |
| | Chromium, Cr | mg/kg | 0.5 | 32 | 38.31 | 80 - 120 | 82 |
| | Copper, Cu | mg/kg | 0.5 | 300 | 290 | 80 - 120 | 104 |
| | Nickel, Ni | mg/kg | 0.5 | 190 | 187 | 80 - 120 | 101 |
| | Lead, Pb | mg/kg | 1 | 97 | 89.9 | 80 - 120 | 108 |
| | Zinc, Zn | mg/kg | 2 | 270 | 273 | 80 - 120 | 99 |
| LB197289.002 | Arsenic, As | mg/kg | 1 | 340 | 318.22 | 80 - 120 | 106 |
| | Cadmium, Cd | mg/kg | 0.3 | 5.2 | 5.41 | 80 - 120 | 96 |
| | Chromium, Cr | mg/kg | 0.5 | 35 | 38.31 | 80 - 120 | 90 |
| | Copper, Cu | mg/kg | 0.5 | 300 | 290 | 80 - 120 | 102 |
| | Nickel, Ni | mg/kg | 0.5 | 180 | 187 | 80 - 120 | 98 |
| | Lead, Pb | mg/kg | 1 | 99 | 89.9 | 80 - 120 | 110 |
| | Zinc, Zn | mg/kg | 2 | 270 | 273 | 80 - 120 | 98 |
| LB197722.002 | Arsenic, As | mg/kg | 1 | 350 | 318.22 | 80 - 120 | 110 |
| | Cadmium, Cd | mg/kg | 0.3 | 5.5 | 5.41 | 80 - 120 | 102 |
| | Chromium, Cr | mg/kg | 0.5 | 33 | 38.31 | 80 - 120 | 86 |
| | Copper, Cu | mg/kg | 0.5 | 300 | 290 | 80 - 120 | 103 |
| | Nickel, Ni | mg/kg | 0.5 | 170 | 187 | 80 - 120 | 92 |
| | Lead, Pb | mg/kg | 1 | 100 | 89.9 | 80 - 120 | 112 |
| | Zinc, Zn | mg/kg | 2 | 280 | 273 | 80 - 120 | 103 |

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

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

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB197279.002 | Arsenic, As | µg/L | 1 | 19 | 20 | 80 - 120 | 95 |
| | Cadmium, Cd | µg/L | 0.1 | 19 | 20 | 80 - 120 | 94 |
| | Chromium, Cr | µg/L | 1 | 21 | 20 | 80 - 120 | 103 |
| | Copper, Cu | µg/L | 1 | 20 | 20 | 80 - 120 | 101 |
| | Lead, Pb | µg/L | 1 | 18 | 20 | 80 - 120 | 89 |
| | Nickel, Ni | µg/L | 1 | 20 | 20 | 80 - 120 | 102 |
| | Zinc, Zn | µg/L | 5 | 19 | 20 | 80 - 120 | 96 |

### TRH (Total Recoverable Hydrocarbons) in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB197266.002 | | TRH C10-C14 | mg/kg | 20 | 29 | 40 | 60 - 140 | 73 |
| | | TRH C15-C28 | mg/kg | 45 | <45 | 40 | 60 - 140 | 78 |
| | | TRH C29-C36 | mg/kg | 45 | <45 | 40 | 60 - 140 | 73 |
| | TRH F Bands | TRH >C10-C16 | mg/kg | 25 | 33 | 40 | 60 - 140 | 83 |
| | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | 40 | 60 - 140 | 78 |
| | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | 20 | 60 - 140 | 65 |
| LB197267.002 | | TRH C10-C14 | mg/kg | 20 | 35 | 40 | 60 - 140 | 88 |
| | | TRH C15-C28 | mg/kg | 45 | <45 | 40 | 60 - 140 | 75 |
| | | TRH C29-C36 | mg/kg | 45 | <45 | 40 | 60 - 140 | 70 |
| | TRH F Bands | TRH >C10-C16 | mg/kg | 25 | 33 | 40 | 60 - 140 | 83 |
| | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | 40 | 60 - 140 | 75 |
| | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | 20 | 60 - 140 | 65 |
| LB197268.002 | | TRH C10-C14 | mg/kg | 20 | 32 | 40 | 60 - 140 | 80 |
| | | TRH C15-C28 | mg/kg | 45 | <45 | 40 | 60 - 140 | 75 |
| | | TRH C29-C36 | mg/kg | 45 | <45 | 40 | 60 - 140 | 63 |
| | TRH F Bands | TRH >C10-C16 | mg/kg | 25 | 31 | 40 | 60 - 140 | 78 |
| | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | 40 | 60 - 140 | 73 |
| | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | 20 | 60 - 140 | 60 |

### VOC's in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB197263.002 | Halogenated | 1,1-dichloroethene | mg/kg | 0.1 | 4.1 | 5 | 60 - 140 | 83 |
| | Aliphatics | 1,2-dichloroethane | mg/kg | 0.1 | 4.8 | 5 | 60 - 140 | 95 |
| | | Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | 4.3 | 5 | 60 - 140 | 87 |
| | Halogenated | Chlorobenzene | mg/kg | 0.1 | 5.1 | 5 | 60 - 140 | 103 |

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 % |
|---|---|---|---|---|---|---|---|---|
| LB197263.002 | Monocyclic | Benzene | mg/kg | 0.1 | 4.0 | 5 | 60 - 140 | 81 |
| | Aromatic | Toluene | mg/kg | 0.1 | 4.3 | 5 | 60 - 140 | 86 |
| | | Ethylbenzene | mg/kg | 0.1 | 4.1 | 5 | 60 - 140 | 83 |
| | | m/p-xylene | mg/kg | 0.2 | 8.5 | 10 | 60 - 140 | 85 |
| | | o-xylene | mg/kg | 0.1 | 4.3 | 5 | 60 - 140 | 86 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 9.9 | 10 | 70 - 130 | 99 |
| | | d8-toluene (Surrogate) | mg/kg | - | 10.2 | 10 | 70 - 130 | 102 |
| | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.7 | 10 | 70 - 130 | 87 |
| | Trihalomethan | Chloroform | mg/kg | 0.1 | 4.7 | 5 | 60 - 140 | 93 |
| LB197264.002 | Halogenated | 1,1-dichloroethene | mg/kg | 0.1 | 3.9 | 5 | 60 - 140 | 79 |
| | Aliphatics | 1,2-dichloroethane | mg/kg | 0.1 | 4.4 | 5 | 60 - 140 | 88 |
| | | Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | 4.1 | 5 | 60 - 140 | 82 |
| | Halogenated | Chlorobenzene | mg/kg | 0.1 | 4.8 | 5 | 60 - 140 | 96 |
| | Monocyclic | Benzene | mg/kg | 0.1 | 4.3 | 5 | 60 - 140 | 85 |
| | Aromatic | Toluene | mg/kg | 0.1 | 4.4 | 5 | 60 - 140 | 89 |
| | | Ethylbenzene | mg/kg | 0.1 | 4.5 | 5 | 60 - 140 | 89 |
| | | m/p-xylene | mg/kg | 0.2 | 9.1 | 10 | 60 - 140 | 91 |
| | | o-xylene | mg/kg | 0.1 | 4.6 | 5 | 60 - 140 | 91 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 11.1 | 10 | 70 - 130 | 111 |
| | | d8-toluene (Surrogate) | mg/kg | - | 11.4 | 10 | 70 - 130 | 114 |
| | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.1 | 10 | 70 - 130 | 81 |
| | Trihalomethan | Chloroform | mg/kg | 0.1 | 4.5 | 5 | 60 - 140 | 90 |
| LB197265.002 | Halogenated | 1,1-dichloroethene | mg/kg | 0.1 | 3.8 | 5 | 60 - 140 | 76 |
| | Aliphatics | 1,2-dichloroethane | mg/kg | 0.1 | 4.6 | 5 | 60 - 140 | 93 |
| | | Trichloroethene (Trichloroethylene -TCE) | mg/kg | 0.1 | 4.3 | 5 | 60 - 140 | 87 |
| | Halogenated | Chlorobenzene | mg/kg | 0.1 | 5.0 | 5 | 60 - 140 | 99 |
| | Monocyclic | Benzene | mg/kg | 0.1 | 3.8 | 5 | 60 - 140 | 77 |
| | Aromatic | Toluene | mg/kg | 0.1 | 4.1 | 5 | 60 - 140 | 83 |
| | | Ethylbenzene | mg/kg | 0.1 | 4.2 | 5 | 60 - 140 | 84 |
| | | m/p-xylene | mg/kg | 0.2 | 8.4 | 10 | 60 - 140 | 84 |
| | | o-xylene | mg/kg | 0.1 | 4.2 | 5 | 60 - 140 | 83 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 7.9 | 10 | 70 - 130 | 79 |
| | | d8-toluene (Surrogate) | mg/kg | - | 7.2 | 10 | 70 - 130 | 72 |
| | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.4 | 10 | 70 - 130 | 84 |
| | Trihalomethan | Chloroform | mg/kg | 0.1 | 4.3 | 5 | 60 - 140 | 85 |

## Volatile Petroleum Hydrocarbons in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB197263.002 | | TRH C6-C10 | mg/kg | 25 | 77 | 92.5 | 60 - 140 | 83 |
| | | TRH C6-C9 | mg/kg | 20 | 64 | 80 | 60 - 140 | 80 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 9.9 | 10 | 70 - 130 | 99 |
| | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.7 | 10 | 70 - 130 | 87 |
| | VPH F Bands | TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | 52 | 62.5 | 60 - 140 | 83 |
| LB197264.002 | | TRH C6-C10 | mg/kg | 25 | 83 | 92.5 | 60 - 140 | 90 |
| | | TRH C6-C9 | mg/kg | 20 | 70 | 80 | 60 - 140 | 87 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 11.1 | 10 | 70 - 130 | 111 |
| | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.1 | 10 | 70 - 130 | 81 |
| | VPH F Bands | TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | 56 | 62.5 | 60 - 140 | 90 |
| LB197265.002 | | TRH C6-C10 | mg/kg | 25 | 69 | 92.5 | 60 - 140 | 75 |
| | | TRH C6-C9 | mg/kg | 20 | 59 | 80 | 60 - 140 | 74 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 7.9 | 10 | 70 - 130 | 79 |
| | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.4 | 10 | 70 - 130 | 84 |
| | VPH F Bands | TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | 44 | 62.5 | 60 - 140 | 71 |

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

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

## Mercury (dissolved) in Water

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

| QC Sample | Sample Number | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE204892.023 | LB197375.004 | Mercury | mg/L | 0.0001 | 0.0065 | <0.0001 | 0.008 | 81 |

## Mercury in Soil

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

| QC Sample | Sample Number | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE204895.001 | LB197290.004 | Mercury | mg/kg | 0.05 | 0.19 | <0.05 | 0.2 | 89 |
| SE204895.020 | LB197291.004 | Mercury | mg/kg | 0.05 | 0.18 | <0.05 | 0.2 | 86 |
| SE204895.041 | LB197292.004 | Mercury | mg/kg | 0.05 | 0.18 | <0.05 | 0.2 | 83 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.001 | LB197266.004 | | Naphthalene | mg/kg | 0.1 | 3.9 | <0.1 | 4 | 97 |
| | | | 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 | 4.0 | <0.1 | 4 | 100 |
| | | | Acenaphthene | mg/kg | 0.1 | 4.2 | <0.1 | 4 | 104 |
| | | | Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Phenanthrene | mg/kg | 0.1 | 4.2 | <0.1 | 4 | 105 |
| | | | Anthracene | mg/kg | 0.1 | 3.9 | <0.1 | 4 | 98 |
| | | | Fluoranthene | mg/kg | 0.1 | 4.0 | <0.1 | 4 | 100 |
| | | | Pyrene | mg/kg | 0.1 | 4.2 | <0.1 | 4 | 106 |
| | | | 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 | 3.7 | <0.1 | 4 | 93 |
| | | | 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 | 3.7 | <0.2 | - | - |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 0.3 | 3.9 | <0.3 | - | - |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | TEQ (mg/kg) | 0.2 | 3.8 | <0.2 | - | - |
| | | | Total PAH (18) | mg/kg | 0.8 | 32 | <0.8 | - | - |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.4 | 0.4 | - | 80 |
| | | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | - | 83 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | - | 75 |
| SE204895.021 | LB197267.004 | | Naphthalene | mg/kg | 0.1 | 3.9 | <0.1 | 4 | 98 |
| | | | 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 | 4.0 | <0.1 | 4 | 100 |
| | | | Acenaphthene | mg/kg | 0.1 | 4.1 | <0.1 | 4 | 104 |
| | | | Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Phenanthrene | mg/kg | 0.1 | 4.2 | <0.1 | 4 | 104 |
| | | | Anthracene | mg/kg | 0.1 | 4.0 | <0.1 | 4 | 100 |
| | | | Fluoranthene | mg/kg | 0.1 | 3.9 | <0.1 | 4 | 98 |
| | | | Pyrene | mg/kg | 0.1 | 4.3 | <0.1 | 4 | 108 |
| | | | 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 | 3.9 | <0.1 | 4 | 98 |
| | | | 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 | 3.9 | <0.2 | - | - |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 0.3 | 4.1 | <0.3 | - | - |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | TEQ (mg/kg) | 0.2 | 4.0 | <0.2 | - | - |
| | | | Total PAH (18) | mg/kg | 0.8 | 32 | <0.8 | - | - |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.4 | 0.4 | - | 85 |
| | | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | - | 82 |

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

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

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

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.021 | LB197267.004 | Surrogates | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | - | 82 |
| SE204895.041 | LB197268.004 | | Naphthalene | mg/kg | 0.1 | 3.9 | <0.1 | 4 | 97 |
| | | | 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 | 3.9 | <0.1 | 4 | 96 |
| | | | Acenaphthene | mg/kg | 0.1 | 4.1 | <0.1 | 4 | 102 |
| | | | Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Phenanthrene | mg/kg | 0.1 | 4.2 | <0.1 | 4 | 105 |
| | | | Anthracene | mg/kg | 0.1 | 3.9 | <0.1 | 4 | 98 |
| | | | Fluoranthene | mg/kg | 0.1 | 4.0 | <0.1 | 4 | 99 |
| | | | Pyrene | mg/kg | 0.1 | 4.2 | <0.1 | 4 | 104 |
| | | | 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 | 3.7 | <0.1 | 4 | 92 |
| | | | 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 | 3.7 | <0.2 | - | - |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 0.3 | 3.8 | <0.3 | - | - |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | TEQ (mg/kg) | 0.2 | 3.8 | <0.2 | - | - |
| | | | Total PAH (18) | mg/kg | 0.8 | 32 | <0.8 | - | - |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.4 | 0.4 | - | 82 |
| | | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | - | 80 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | - | 77 |

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

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

| QC Sample | Sample Number | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE204895.001 | LB197287.004 | Arsenic, As | mg/kg | 1 | 50 | 2 | 50 | 96 |
| | | Cadmium, Cd | mg/kg | 0.3 | 47 | <0.3 | 50 | 93 |
| | | Chromium, Cr | mg/kg | 0.5 | 51 | 4.0 | 50 | 94 |
| | | Copper, Cu | mg/kg | 0.5 | 56 | 6.8 | 50 | 98 |
| | | Nickel, Ni | mg/kg | 0.5 | 53 | 8.2 | 50 | 90 |
| | | Lead, Pb | mg/kg | 1 | 54 | 6 | 50 | 96 |
| | | Zinc, Zn | mg/kg | 2 | 110 | 57 | 50 | 97 |
| SE204895.020 | LB197288.004 | Arsenic, As | mg/kg | 1 | 62 | 24 | 50 | 77 |
| | | Cadmium, Cd | mg/kg | 0.3 | 46 | <0.3 | 50 | 92 |
| | | Chromium, Cr | mg/kg | 0.5 | 54 | 7.9 | 50 | 91 |
| | | Copper, Cu | mg/kg | 0.5 | 86 | 40 | 50 | 91 |
| | | Nickel, Ni | mg/kg | 0.5 | 52 | 6.3 | 50 | 92 |
| | | Lead, Pb | mg/kg | 1 | 94 | 46 | 50 | 95 |
| | | Zinc, Zn | mg/kg | 2 | 980 | 1100 | 50 | -216 ⑨ |
| SE204895.041 | LB197289.004 | Arsenic, As | mg/kg | 1 | 47 | 5 | 50 | 83 |
| | | Cadmium, Cd | mg/kg | 0.3 | 44 | <0.3 | 50 | 87 |
| | | Chromium, Cr | mg/kg | 0.5 | 160 | 110 | 50 | 91 |
| | | Copper, Cu | mg/kg | 0.5 | 92 | 58 | 50 | 68 ④ |
| | | Nickel, Ni | mg/kg | 0.5 | 45 | 5.5 | 50 | 80 |
| | | Lead, Pb | mg/kg | 1 | 130 | 100 | 50 | 65 ④ |
| | | Zinc, Zn | mg/kg | 2 | 980 | 980 | 50 | -5 ④ |

## Trace Metals (Dissolved) in Water by ICPMS

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

| QC Sample | Sample Number | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE204867.001 | LB197279.004 | Arsenic, As | µg/L | 1 | 23 | 1 | 20 | 107 |
| | | Cadmium, Cd | µg/L | 0.1 | 19 | <0.1 | 20 | 96 |
| | | Chromium, Cr | µg/L | 1 | 21 | <1 | 20 | 101 |
| | | Copper, Cu | µg/L | 1 | 18 | <1 | 20 | 91 |
| | | Lead, Pb | µg/L | 1 | 18 | <1 | 20 | 87 |
| | | Zinc, Zn | µg/L | 5 | 91 | 71 | 20 | 102 |

## TRH (Total Recoverable Hydrocarbons) in Soil

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

| QC Sample | Sample Number | Parameter | Units | LOR |
|---|---|---|---|---|

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

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

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

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.001 | LB197266.004 | | TRH C10-C14 | mg/kg | 20 | 45 | <20 | 40 | 113 |
| | | | TRH C15-C28 | mg/kg | 45 | <45 | <45 | 40 | 110 |
| | | | TRH C29-C36 | mg/kg | 45 | <45 | <45 | 40 | 98 |
| | | | 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 | TRH >C10-C16 | mg/kg | 25 | 46 | <25 | 40 | 115 |
| | | | TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | 46 | <25 | - | - |
| | | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | 40 | 108 |
| | | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | - | - |
| SE204895.021 | LB197267.004 | | TRH C10-C14 | mg/kg | 20 | 35 | <20 | 40 | 88 |
| | | | TRH C15-C28 | mg/kg | 45 | <45 | <45 | 40 | 85 |
| | | | TRH C29-C36 | mg/kg | 45 | <45 | <45 | 40 | 78 |
| | | | 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 | TRH >C10-C16 | mg/kg | 25 | 34 | <25 | 40 | 85 |
| | | | TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | 34 | <25 | - | - |
| | | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | 40 | 88 |
| | | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | - | - |
| SE204895.041 | LB197268.004 | | TRH C10-C14 | mg/kg | 20 | 36 | <20 | 40 | 90 |
| | | | TRH C15-C28 | mg/kg | 45 | <45 | <45 | 40 | 78 |
| | | | TRH C29-C36 | mg/kg | 45 | <45 | <45 | 40 | 70 |
| | | | 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 | TRH >C10-C16 | mg/kg | 25 | 34 | <25 | 40 | 85 |
| | | | TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | 34 | <25 | - | - |
| | | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | 40 | 78 |
| | | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | - | - |

## VOC's in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.001 | LB197263.004 | Monocyclic Aromatic | Benzene | mg/kg | 0.1 | 3.5 | <0.1 | 5 | 70 |
| | | | Toluene | mg/kg | 0.1 | 3.6 | <0.1 | 5 | 72 |
| | | | Ethylbenzene | mg/kg | 0.1 | 3.8 | <0.1 | 5 | 75 |
| | | | m/p-xylene | mg/kg | 0.2 | 7.5 | <0.2 | 10 | 75 |
| | | | o-xylene | mg/kg | 0.1 | 3.7 | <0.1 | 5 | 75 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 9.3 | 9.4 | 10 | 93 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 9.7 | 10.0 | 10 | 97 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 6.7 | 7.8 | 10 | 67 ⓘ |
| | | Totals | Total Xylenes | mg/kg | 0.3 | 11 | <0.3 | - | - |
| | | | Total BTEX | mg/kg | 0.6 | 22 | <0.6 | - | - |
| SE204895.021 | LB197264.004 | Monocyclic Aromatic | Benzene | mg/kg | 0.1 | 3.8 | <0.1 | 5 | 76 |
| | | | Toluene | mg/kg | 0.1 | 4.0 | <0.1 | 5 | 77 |
| | | | Ethylbenzene | mg/kg | 0.1 | 4.1 | <0.1 | 5 | 81 |
| | | | m/p-xylene | mg/kg | 0.2 | 8.2 | 0.3 | 10 | 80 |
| | | | o-xylene | mg/kg | 0.1 | 4.1 | 0.1 | 5 | 79 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 10.3 | 9.6 | 10 | 103 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 10.7 | 10.2 | 10 | 107 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.4 | 8.2 | 10 | 74 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | 12 | 0.4 | - | - |
| | | | Total BTEX | mg/kg | 0.6 | 24 | <0.6 | - | - |
| SE204895.041 | LB197265.004 | Monocyclic Aromatic | Benzene | mg/kg | 0.1 | 4.3 | <0.1 | 5 | 85 |
| | | | Toluene | mg/kg | 0.1 | 4.4 | <0.1 | 5 | 88 |
| | | | Ethylbenzene | mg/kg | 0.1 | 4.4 | <0.1 | 5 | 88 |
| | | | m/p-xylene | mg/kg | 0.2 | 8.9 | <0.2 | 10 | 89 |
| | | | o-xylene | mg/kg | 0.1 | 4.6 | <0.1 | 5 | 92 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | - | - |

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

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

## VOC's in Soil (continued)

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.041 | LB197265.004 | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 11.8 | 10.3 | 10 | 118 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 11.2 | 9.2 | 10 | 112 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 9.1 | 8.7 | 10 | 91 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | 14 | <0.3 | - | - |
| | | | Total BTEX | mg/kg | 0.6 | 27 | <0.6 | - | - |

## Volatile Petroleum Hydrocarbons in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE204895.001 | LB197263.004 | | TRH C6-C10 | mg/kg | 25 | 63 | <25 | 92.5 | 63 |
| | | | TRH C6-C9 | mg/kg | 20 | 55 | <20 | 80 | 63 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 9.3 | 9.4 | 10 | 93 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 9.7 | 10.0 | 10 | 97 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 6.7 | 7.8 | - | 67 |
| | | VPH F | Benzene (F0) | mg/kg | 0.1 | 3.5 | <0.1 | - | - |
| | | Bands | TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | 41 | <25 | 62.5 | 58 |
| SE204895.021 | LB197264.004 | | TRH C6-C10 | mg/kg | 25 | 77 | <25 | 92.5 | 67 |
| | | | TRH C6-C9 | mg/kg | 20 | 66 | <20 | 80 | 68 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 10.3 | 9.6 | 10 | 103 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 10.7 | 10.2 | 10 | 107 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.4 | 8.2 | - | 74 |
| | | VPH F | Benzene (F0) | mg/kg | 0.1 | 3.8 | <0.1 | - | - |
| | | Bands | TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | 53 | <25 | 62.5 | 61 |
| SE204895.041 | LB197265.004 | | TRH C6-C10 | mg/kg | 25 | 78 | <25 | 92.5 | 84 |
| | | | TRH C6-C9 | mg/kg | 20 | 66 | <20 | 80 | 82 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 11.8 | 10.3 | 10 | 118 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 11.2 | 9.2 | 10 | 112 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 9.1 | 8.7 | - | 91 |
| | | VPH F | Benzene (F0) | mg/kg | 0.1 | 4.3 | <0.1 | - | - |
| | | Bands | TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | 52 | <25 | 62.5 | 82 |

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

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

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

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

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

| | |
|---|---|
| * | NATA accreditation does not cover the performance of this service. |
| ** | Indicative data, theoretical holding time exceeded. |
| - | 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 Sydney**
**Unit 16, 33 Maddox Street**
**Alexandria NSW 2015**
**Facsimile No: (02) 85940499**
**Telephone No: (02) 85940400**
**Email:**
**au.samplereceipt.sydney@sgs.com**

**Sample Date:** 3/06/2021

| | | | |
|---|---|---|---|
| Company Name: | JM Environments | Project Name/No: | JME20005-6 |
| Address: | 37 Tooke St | Purchase Order No: | JME20005-6 |
| | COOKS HILL NSW 2300 | Results Required By: | Standard |
| Contact Name: | James McMahon | Email: | james@jmenvironments.com |
| Telephone | 0427 893 668 | Email: | |

| | | | |
|---|---|---|---|
| Relinquished by: J McMahon | Date /Time: 4/6/2021 4pm | Received by: George Zhi | Date /Time: 8/6/21 @ 10:05 am |
| Relinquished by: | Date /Time: | Received by: | Date /Time: |
| Samples intact: (Yes)/No | Temperature: 15°C | Sample Cooler Sealed: Yes/No | Laboratory Quotation: ENVI126319 |

| Lab Sample ID | Sample ID | Water | Soil | Other | Preservative | No. of Containers | | pH/CEC | BTEX/TPH/ PAH/ 8HM | 8HM | OCP/PCB | Asbestos | PFAS | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | HA1-1 | | x | | | | | | | | | | X | | | | | | |
| 2 | HA1-2 | | x | | | | | | | | x | | X | | | | | | |
| 3 | HA2-1 | | x | | | | | | x | | | | X | | | | | | |
| 4 | HA2-2 | | x | | | | | | X | | | x | X | | | | | | |
| 5 | HA3-1 | | x | | | | | | | | | | X | | | | | | |
| 6 | MW10-1 | | X | | | | | | X | | | | X | | | | | | |
| 7 | MW10-2 | | X | | | | | | X | | X | | X | | | | | | |
| 8 | MW10-3 | | X | | | | | | X | | | | X | | | | | | |
| 9 | FM1 | | X | | | | | | X | | | | | | | | | | |
| 10 | FM2 | | X | | | | | | X | | X | | | | | | | | |
| 11 | FM3 | | X | | | | | | X | | | | | | | | | | |
| 12 | QC3 | | X | | | | | | X | | | | | | | | | | |
| 13 | QCA | X | | | | | | | | | | | X | | | | | | |
| 14 | QCB | X | | | | | | | | | | | X | | | | | | |
| | QC3A | | | | | | | | X | | | | | | | | | | Send to ALS. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

SGS EHS Sydney COC
**SE220482**

# SAMPLE RECEIPT ADVICE

SE220482

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20005-6** |
| Order Number | **JME20005-6** |
| Samples | 14 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| Samples Received | Tue 8/6/2021 |
| Report Due | Wed 16/6/2021 |
| SGS Reference | **SE220482** |

## SUBMISSION DETAILS

This is to confirm that 14 samples were received on Tuesday 8/6/2021. Results are expected to be ready by COB Wednesday 16/6/2021.
Please quote SGS reference SE220482 when making enquiries. Refer below for details relating to sample integrity upon receipt.

| | | | |
|---|---|---|---|
| Samples clearly labelled | Yes | Complete documentation received | Yes |
| Sample container provider | SGS | Sample cooling method | Ice Bricks |
| Samples received in correct containers | Yes | Sample counts by matrix | 12 Soil, 2 Water |
| Date documentation received | 8/6/2021 | Type of documentation received | COC |
| Samples received in good order | Yes | Samples received without headspace | Yes |
| Sample temperature upon receipt | 15°C | Sufficient sample for analysis | Yes |
| Turnaround time requested | Standard | | |

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

## COMMENTS

PFAS subcontracted to SGS Melbourne, Unit 10/585 Blackburn Road Notting Hill VIC 3168, NATA Accreditation Number 2562, Site number 14420.
Where a separate portion was not supplied for Asbestos analysis. A sub-sample will be used from the jar provided.

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# SAMPLE RECEIPT ADVICE

SE220482

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME20005-6

SUMMARY OF ANALYSIS

| No. | Sample ID | OC Pesticides in Soil | PAH (Polynuclear Aromatic Hydrocarbons) in Soil | PCBs in Soil | Total Recoverable Elements in Soil/Waste | TRH (Total Recoverable Hydrocarbons) in Soil | VOC's in Soil | Volatile Petroleum Hydrocarbons in Soil |
|---|---|---|---|---|---|---|---|---|
| 002 | HA1-2 | 29 | - | 11 | - | - | - | - |
| 003 | HA2-1 | - | 26 | - | 7 | 10 | 11 | 7 |
| 004 | HA2-2 | - | 26 | - | 7 | 10 | 11 | 7 |
| 006 | MW10-1 | - | 26 | - | 7 | 10 | 11 | 7 |
| 007 | MW10-2 | 29 | 26 | 11 | 7 | 10 | 11 | 7 |
| 008 | MW10-3 | - | 26 | - | 7 | 10 | 11 | 7 |
| 009 | FM1 | - | 26 | - | 7 | 10 | 11 | 7 |
| 010 | FM2 | 29 | 26 | 11 | 7 | 10 | 11 | 7 |
| 011 | FM3 | - | 26 | - | 7 | 10 | 11 | 7 |
| 012 | QC3 | - | 26 | - | 7 | 10 | 11 | 7 |

CONTINUED OVERLEAF

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

# SAMPLE RECEIPT ADVICE

SE220482

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME20005-6

SUMMARY OF ANALYSIS

| No. | Sample ID | Fibre Identification in soil | Mercury in Soil | Moisture Content | Per- and Polyfluoroalkyl Substances (PFAS) in | Per- and Polyfluoroalkyl Substances (PFAS) in |
|---|---|---|---|---|---|---|
| 001 | HA1-1 | - | - | 1 | - | 56 |
| 002 | HA1-2 | - | - | 1 | - | 56 |
| 003 | HA2-1 | - | 1 | 1 | - | 56 |
| 004 | HA2-2 | 2 | 1 | 1 | - | 56 |
| 005 | HA3-1 | - | - | 1 | - | 56 |
| 006 | MW10-1 | - | 1 | 1 | - | 56 |
| 007 | MW10-2 | - | 1 | 1 | - | 56 |
| 008 | MW10-3 | - | 1 | 1 | - | 56 |
| 009 | FM1 | - | 1 | 1 | - | - |
| 010 | FM2 | - | 1 | 1 | - | - |
| 011 | FM3 | - | 1 | 1 | - | - |
| 012 | QC3 | - | 1 | 1 | - | - |
| 013 | QCA | - | - | - | 56 | - |
| 014 | QCB | - | - | - | 56 | - |

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

# ANALYTICAL REPORT

Accreditation No. 2562

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20005-6** |
| Order Number | **JME20005-6** |
| Samples | 14 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE220482 R0** |
| Date Received | 8/6/2021 |
| Date Reported | 16/6/2021 |

## 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 soil sample supplied has been sub-sampled for asbestos according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. For identification of asbestos in soil samples, Industries & environment recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

PFAS subcontracted to SGS Melbourne, Unit 10/585 Blackburn Road Notting Hill VIC 3168, NATA Accreditation Number 2562, Site number 14420. ME320921

MA1523: Surrogate recoveries of some PFAS compounds out of range due to matrix interference .

## SIGNATORIES



**Akheeqar BENIAMEEN**
Chemist



**Dong LIANG**
Metals/Inorganics Team Leader



**Huong CRAWFORD**
Production Manager



**Kamrul AHSAN**
Senior Chemist



**Ly Kim HA**
Organic Section Head



**Shane MCDERMOTT**
Inorganic/Metals Chemist

## VOC's in Soil [AN433] Tested: 9/6/2021

| PARAMETER | UOM | LOR | HA2-1 SOIL - 3/6/2021 SE220482.003 | HA2-2 SOIL - 3/6/2021 SE220482.004 | MW10-1 SOIL - 3/6/2021 SE220482.006 | MW10-2 SOIL - 3/6/2021 SE220482.007 | MW10-3 SOIL - 3/6/2021 SE220482.008 |
|---|---|---|---|---|---|---|---|
| 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 | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |

| PARAMETER | UOM | LOR | FM1 SOIL - 3/6/2021 SE220482.009 | FM2 SOIL - 3/6/2021 SE220482.010 | FM3 SOIL - 3/6/2021 SE220482.011 | QC3 SOIL - 3/6/2021 SE220482.012 |
|---|---|---|---|---|---|---|
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <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 | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |

## Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 9/6/2021

| PARAMETER | UOM | LOR | HA2-1 SOIL - 3/6/2021 SE220482.003 | HA2-2 SOIL - 3/6/2021 SE220482.004 | MW10-1 SOIL - 3/6/2021 SE220482.006 | MW10-2 SOIL - 3/6/2021 SE220482.007 | MW10-3 SOIL - 3/6/2021 SE220482.008 |
|---|---|---|---|---|---|---|---|
| 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 | FM1 SOIL - 3/6/2021 SE220482.009 | FM2 SOIL - 3/6/2021 SE220482.010 | FM3 SOIL - 3/6/2021 SE220482.011 | QC3 SOIL - 3/6/2021 SE220482.012 |
|---|---|---|---|---|---|---|
| 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: 8/6/2021

| PARAMETER | UOM | LOR | HA2-1 SOIL - 3/6/2021 SE220482.003 | HA2-2 SOIL - 3/6/2021 SE220482.004 | MW10-1 SOIL - 3/6/2021 SE220482.006 | MW10-2 SOIL - 3/6/2021 SE220482.007 | MW10-3 SOIL - 3/6/2021 SE220482.008 |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <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 | FM1 SOIL - 3/6/2021 SE220482.009 | FM2 SOIL - 3/6/2021 SE220482.010 | FM3 SOIL - 3/6/2021 SE220482.011 | QC3 SOIL - 3/6/2021 SE220482.012 |
|---|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <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 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | <210 | <210 | <210 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 8/6/2021

| PARAMETER | UOM | LOR | HA2-1 SOIL - 3/6/2021 SE220482.003 | HA2-2 SOIL - 3/6/2021 SE220482.004 | MW10-1 SOIL - 3/6/2021 SE220482.006 | MW10-2 SOIL - 3/6/2021 SE220482.007 | MW10-3 SOIL - 3/6/2021 SE220482.008 |
|---|---|---|---|---|---|---|---|
| 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 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | **0.2** | **0.1** | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | **0.2** | **0.1** | <0.1 | <0.1 | <0.1 |
| 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 | **0.2** | <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 | **0.9** | <0.8 | <0.8 | <0.8 | <0.8 |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | **0.9** | <0.8 | <0.8 | <0.8 | <0.8 |

| PARAMETER | UOM | LOR | FM1 SOIL - 3/6/2021 SE220482.009 | FM2 SOIL - 3/6/2021 SE220482.010 | FM3 SOIL - 3/6/2021 SE220482.011 | QC3 SOIL - 3/6/2021 SE220482.012 |
|---|---|---|---|---|---|---|
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.1** |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.4** |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.4** |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.3** |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.4** |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.5** |
| Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.3** |
| Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.5** |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.3** |
| Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(ghi)perylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.3** |
| Carcinogenic PAHs, BaP TEQ <LOR=0 | TEQ (mg/kg) | 0.2 | <0.2 | <0.2 | <0.2 | **0.6** |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 0.3 | <0.3 | <0.3 | <0.3 | **0.7** |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | TEQ (mg/kg) | 0.2 | <0.2 | <0.2 | <0.2 | **0.7** |
| Total PAH (18) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | **3.5** |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | **3.5** |

## OC Pesticides in Soil [AN420] Tested: 8/6/2021

| PARAMETER | UOM | LOR | HA1-2<br>SOIL<br>-<br>3/6/2021<br>SE220482.002 | MW10-2<br>SOIL<br>-<br>3/6/2021<br>SE220482.007 | FM2<br>SOIL<br>-<br>3/6/2021<br>SE220482.010 |
|---|---|---|---|---|---|
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Alpha BHC | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Lindane | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Heptachlor | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Aldrin | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Beta BHC | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Delta BHC | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Heptachlor epoxide | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| o,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Alpha Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Gamma Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Alpha Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| trans-Nonachlor | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| p,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Dieldrin | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Endrin | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| o,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| o,p'-DDT | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Beta Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| p,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| p,p'-DDT | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Endosulfan sulphate | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Endrin Aldehyde | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Methoxychlor | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Endrin Ketone | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Isodrin | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Mirex | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Total CLP OC Pesticides | mg/kg | 1 | <1 | <1 | <1 |

## PCBs in Soil [AN420] Tested: 8/6/2021

| PARAMETER | UOM | LOR | HA1-2<br>SOIL<br>-<br>3/6/2021<br>SE220482.002 | MW10-2<br>SOIL<br>-<br>3/6/2021<br>SE220482.007 | FM2<br>SOIL<br>-<br>3/6/2021<br>SE220482.010 |
|---|---|---|---|---|---|
| Arochlor 1016 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1221 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1232 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1242 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1248 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1254 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1260 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1262 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1268 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| Total PCBs (Arochlors) | mg/kg | 1 | <1 | <1 | <1 |

## Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 15/6/2021

| PARAMETER | UOM | LOR | HA2-1 SOIL - 3/6/2021 SE220482.003 | HA2-2 SOIL - 3/6/2021 SE220482.004 | MW10-1 SOIL - 3/6/2021 SE220482.006 | MW10-2 SOIL - 3/6/2021 SE220482.007 | MW10-3 SOIL - 3/6/2021 SE220482.008 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | 16 | 290 | 3 | 3 | <1 |
| Cadmium, Cd | mg/kg | 0.3 | 0.4 | 3.2 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | 110 | 6.0 | 2.4 | 16 | 1.7 |
| Copper, Cu | mg/kg | 0.5 | 62 | 170 | 2.1 | 9.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | 66 | 33 | 6 | 11 | <1 |
| Nickel, Ni | mg/kg | 0.5 | 15 | 6.4 | 2.5 | 3.9 | 0.7 |
| Zinc, Zn | mg/kg | 2 | 1800 | 6.4 | 2.5 | 3.9 | <2.0 |

| PARAMETER | UOM | LOR | FM1 SOIL - 3/6/2021 SE220482.009 | FM2 SOIL - 3/6/2021 SE220482.010 | FM3 SOIL - 3/6/2021 SE220482.011 | QC3 SOIL - 3/6/2021 SE220482.012 |
|---|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | 2 | 3 | 2 | 9 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | 10 | 29 | 11 | 22 |
| Copper, Cu | mg/kg | 0.5 | 21 | 31 | 25 | 45 |
| Lead, Pb | mg/kg | 1 | 36 | 52 | 68 | 62 |
| Nickel, Ni | mg/kg | 0.5 | 5.5 | 6.1 | 5.4 | 6.6 |
| Zinc, Zn | mg/kg | 2 | 5.5 | 1900 | 850 | 1600 |

## Mercury in Soil [AN312] Tested: 15/6/2021

| PARAMETER | UOM | LOR | HA2-1<br>SOIL<br>-<br>3/6/2021<br>SE220482.003 | HA2-2<br>SOIL<br>-<br>3/6/2021<br>SE220482.004 | MW10-1<br>SOIL<br>-<br>3/6/2021<br>SE220482.006 | MW10-2<br>SOIL<br>-<br>3/6/2021<br>SE220482.007 | MW10-3<br>SOIL<br>-<br>3/6/2021<br>SE220482.008 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

| PARAMETER | UOM | LOR | FM1<br>SOIL<br>-<br>3/6/2021<br>SE220482.009 | FM2<br>SOIL<br>-<br>3/6/2021<br>SE220482.010 | FM3<br>SOIL<br>-<br>3/6/2021<br>SE220482.011 | QC3<br>SOIL<br>-<br>3/6/2021<br>SE220482.012 |
|---|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

## Moisture Content [AN002] Tested: 9/6/2021

| PARAMETER | UOM | LOR | HA1-2<br>SOIL<br>-<br>3/6/2021<br>SE220482.002 | HA2-1<br>SOIL<br>-<br>3/6/2021<br>SE220482.003 | HA2-2<br>SOIL<br>-<br>3/6/2021<br>SE220482.004 | MW10-1<br>SOIL<br>-<br>3/6/2021<br>SE220482.006 | MW10-2<br>SOIL<br>-<br>3/6/2021<br>SE220482.007 |
|---|---|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | 6.5 | 6.9 | 7.0 | 2.9 | 8.0 |

| PARAMETER | UOM | LOR | MW10-3<br>SOIL<br>-<br>3/6/2021<br>SE220482.008 | FM1<br>SOIL<br>-<br>3/6/2021<br>SE220482.009 | FM2<br>SOIL<br>-<br>3/6/2021<br>SE220482.010 | FM3<br>SOIL<br>-<br>3/6/2021<br>SE220482.011 | QC3<br>SOIL<br>-<br>3/6/2021<br>SE220482.012 |
|---|---|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | 20.5 | 3.6 | 4.5 | 12.5 | 3.7 |

## Fibre Identification in soil [AN602] Tested: 11/6/2021

| PARAMETER | UOM | LOR | HA2-2<br>SOIL<br>-<br>3/6/2021<br>SE220482.004 |
|---|---|---|---|
| Asbestos Detected | No unit | - | No |
| Estimated Fibres* | %w/w | 0.01 | <0.01 |

## Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [MA-1523] Tested: 16/6/2021

| PARAMETER | UOM | LOR | HA1-1 SOIL - 3/6/2021 SE220482.001 | HA1-2 SOIL - 3/6/2021 SE220482.002 | HA2-1 SOIL - 3/6/2021 SE220482.003 | HA2-2 SOIL - 3/6/2021 SE220482.004 | HA3-1 SOIL - 3/6/2021 SE220482.005 |
|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| Total of PFAS (n=30) | mg/kg | 0.08 | - | - | - | - | - |

## Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [MA-1523] Tested: 16/6/2021 (continued)

| PARAMETER | UOM | LOR | MW10-1<br>SOIL<br>-<br>3/6/2021<br>SE220482.006 | MW10-2<br>SOIL<br>-<br>3/6/2021<br>SE220482.007 | MW10-3<br>SOIL<br>-<br>3/6/2021<br>SE220482.008 |
|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | <0.0032 | <0.0032 | <0.0032 |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 |
| Total of PFAS (n=30) | mg/kg | 0.08 | - | - | - |

## Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples [MA-1523] Tested: 16/6/2021

| PARAMETER | UOM | LOR | QCA WATER - 3/6/2021 SE220482.013 | QCB WATER - 3/6/2021 SE220482.014 |
|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluorononanoic acid (PFNA) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.008 | <0.008 | <0.008 |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.002 | <0.002 | **0.003** |
| Sum of PFHxS and PFOS | µg/L | 0.002 | <0.002 | **0.003** |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.002 | <0.002 | <0.002 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.002 | <0.002 | <0.002 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.002 | <0.002 | <0.002 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluoroctane sulfonamide (PFOSA) | µg/L | 0.008 | <0.008 | <0.008 |
| N-Methylperfluoroctane sulfonamide (N-MeFOSA) | µg/L | 0.01 | <0.01 | <0.01 |
| N-Ethylperfluoroctane sulfonamide (N-EtFOSA) | µg/L | 0.01 | <0.01 | <0.01 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.01 | <0.01 | <0.01 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.01 | <0.01 | <0.01 |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.01 | <0.01 | <0.01 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.01 | <0.01 | <0.01 |
| Total of PFAS (n=30) | µg/L | 0.04 | <0.04 | <0.04 |

| 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. |
| 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 ASS or ICP as per USEPA Method 200.8. |
| 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 |
| 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). |
| 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 | 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 | Fibres/material that cannot be unequivocably 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 | AS4964.2004 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 | 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-<br><br>(a) no trace asbestos fibres have been detected (i.e. no ‘respirable ’ fibres):<br>(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<br>(c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions. |

| | |
|---|---|
| MA-1523 | This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts, determined as the total of linear and branched isomers. After spiking with isotopically labelled quantification surrogates and clean-up via SPE cartridges sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification. |

FOOTNOTES

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

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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

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# STATEMENT OF QA/QC PERFORMANCE

**SE220482 R0**

| ChIENF DEFAIhS | | hABORAFORY DEFAIhS | |
|---|---|---|---|
| Contact | James McMaTon | Manager | Huong Crawford |
| Client | JM ENVIRONMENFS | haLoratory | SGS Alexandria Environmental |
| Address | 3) FOOKE SFREEF<br>COOKS HIhh NSW 2300 | Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| FelepTone | 042) 893 668 | FelepTone | +61 2 8594 0400 |
| 7acsimile | jNot specified( | 7acsimile | +61 2 8594 0499 |
| Email | lames@bmenvironments.com | Email | au.environmental.sydney@sgs.com |
| Proiect | **JME20005-6** | SGS Reference | **SE220482 R0** |
| Order NumLer | **JME20005-6** | Date Received | 08 Jun 2021 |
| Samples | 14 | Date Reported | 16 Jun 2021 |

COMMENFS

All tTe laLoratory data for eacT environmental matrix was compared to SGS' stated Data Quality OLiectives jDQO(. Comments arising from tTe comparison were made and are reported Lelow.

FTe data relating to sampling was taken from tTe CTain of Custody document.
FTis QA/QC Statement must Le read in conbunction witT tTe referenced Analytical Report.
FTe Statement and tTe Analytical Report must not Le reproduced except in full.

All Data Quality OLiectives were met witT tTe exception of tTe following:

| | | |
|---|---|---|
| Duplicate | Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES | 4 items |
| Matrix Spike | Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES | 3 items |

SAMPhE SUMMARY

| | | | |
|---|---|---|---|
| Samples clearly laLelled | Yes | Complete documentation received | Yes |
| Sample container provider | SGS | Sample cooling metTod | Ice Bricks |
| Samples received in correct containers | Yes | Sample counts Ly matrix | 12 Soil, 2 Water |
| Date documentation received | 8/6/2021 | Fype of documentation received | COC |
| Samples received in good order | Yes | Samples received witTout Teadspace | Yes |
| Sample temperature upon receipt | 15°C | Sufficient sample for analysis | Yes |
| Furnaround time requested | Standard | | |

# HOLDING TIME SUMMARY

SE220482 R0

SGS Tolding time criteria are drawn from current regulations and are TigTly dependent on sample container preservation as specified in tTe SGS "7ield Sampling Guide for Containers and Holding Fime" jref: GU-jAU(-ENV.001(. Soil samples guidelines are derived from NEPM "ScTedule Bj3( Guideline on haLoratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 566).1 : 1998 Water Quality - sampling part 1" and APHA "Standard MetTods for tTe Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis Tolding time due dates listed are calculated from tTe date sampled, altTougT Tolding times may Le extended after laLoratory extraction for some analytes. FTe due dates are tTe suggested dates tTat samples may Le Teld Lefore extraction or analysis and still Le considered valid.

Extraction and analysis dates are sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended dagger symLol j†( wTen outside suggested criteria. If tTe

## Fibre Identification in soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA2-2 | SE220482.004 | LB226652 | 03 Jun 2021 | 08 Jun 2021 | 03 Jun 2022 | 11 Jun 2021 | 03 Jun 2022 | 16 Jun 2021 |

## Mercury in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA2-1 | SE220482.003 | LB226745 | 03 Jun 2021 | 08 Jun 2021 | 01 Jul 2021 | 15 Jun 2021 | 01 Jul 2021 | 16 Jun 2021 |
| HA2-2 | SE220482.004 | LB226745 | 03 Jun 2021 | 08 Jun 2021 | 01 Jul 2021 | 15 Jun 2021 | 01 Jul 2021 | 16 Jun 2021 |
| MW10-1 | SE220482.006 | LB226745 | 03 Jun 2021 | 08 Jun 2021 | 01 Jul 2021 | 15 Jun 2021 | 01 Jul 2021 | 16 Jun 2021 |
| MW10-2 | SE220482.007 | LB226745 | 03 Jun 2021 | 08 Jun 2021 | 01 Jul 2021 | 15 Jun 2021 | 01 Jul 2021 | 16 Jun 2021 |
| MW10-3 | SE220482.008 | LB226745 | 03 Jun 2021 | 08 Jun 2021 | 01 Jul 2021 | 15 Jun 2021 | 01 Jul 2021 | 16 Jun 2021 |
| FM1 | SE220482.009 | LB226745 | 03 Jun 2021 | 08 Jun 2021 | 01 Jul 2021 | 15 Jun 2021 | 01 Jul 2021 | 16 Jun 2021 |
| FM2 | SE220482.010 | LB226745 | 03 Jun 2021 | 08 Jun 2021 | 01 Jul 2021 | 15 Jun 2021 | 01 Jul 2021 | 16 Jun 2021 |
| FM3 | SE220482.011 | LB226745 | 03 Jun 2021 | 08 Jun 2021 | 01 Jul 2021 | 15 Jun 2021 | 01 Jul 2021 | 16 Jun 2021 |
| QC3 | SE220482.012 | LB226745 | 03 Jun 2021 | 08 Jun 2021 | 01 Jul 2021 | 15 Jun 2021 | 01 Jul 2021 | 16 Jun 2021 |

## Moisture Content

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-2 | SE220482.002 | LB226450 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 14 Jun 2021 | 09 Jun 2021 |
| HA2-1 | SE220482.003 | LB226588 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 10 Jun 2021 | 15 Jun 2021 | 15 Jun 2021 |
| HA2-2 | SE220482.004 | LB226588 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 10 Jun 2021 | 15 Jun 2021 | 15 Jun 2021 |
| MW10-1 | SE220482.006 | LB226588 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 10 Jun 2021 | 15 Jun 2021 | 15 Jun 2021 |
| MW10-2 | SE220482.007 | LB226588 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 10 Jun 2021 | 15 Jun 2021 | 15 Jun 2021 |
| MW10-3 | SE220482.008 | LB226588 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 10 Jun 2021 | 15 Jun 2021 | 15 Jun 2021 |
| FM1 | SE220482.009 | LB226588 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 10 Jun 2021 | 15 Jun 2021 | 15 Jun 2021 |
| FM2 | SE220482.010 | LB226588 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 10 Jun 2021 | 15 Jun 2021 | 15 Jun 2021 |
| FM3 | SE220482.011 | LB226588 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 10 Jun 2021 | 15 Jun 2021 | 15 Jun 2021 |
| QC3 | SE220482.012 | LB226588 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 10 Jun 2021 | 15 Jun 2021 | 15 Jun 2021 |

## OC Pesticides in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-2 | SE220482.002 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| HA2-1 | SE220482.003 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| HA2-2 | SE220482.004 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| MW10-1 | SE220482.006 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| MW10-2 | SE220482.007 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| MW10-3 | SE220482.008 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| FM1 | SE220482.009 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| FM2 | SE220482.010 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| FM3 | SE220482.011 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| QC3 | SE220482.012 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-2 | SE220482.002 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 16 Jun 2021 |
| HA2-1 | SE220482.003 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| HA2-2 | SE220482.004 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| MW10-1 | SE220482.006 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| MW10-2 | SE220482.007 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| MW10-3 | SE220482.008 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| FM1 | SE220482.009 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| FM2 | SE220482.010 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| FM3 | SE220482.011 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| QC3 | SE220482.012 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |

## PCBs in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-2 | SE220482.002 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| HA2-1 | SE220482.003 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| HA2-2 | SE220482.004 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| MW10-1 | SE220482.006 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| MW10-2 | SE220482.007 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| MW10-3 | SE220482.008 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |

# HOLDING TIME SUMMARY

SE220482 R0

SGS Tolding time criteria are drawn from current regulations and are TigTly dependent on sample container preservation as specified in tTe SGS "7ield Sampling Guide for Containers and Holding Fime" jref: GU-jAU(-ENV.001(. Soil samples guidelines are derived from NEPM "ScTedule Bj3( Guideline on haLoratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 566).1 : 1998 Water Quality - sampling part 1" and APHA "Standard MetTods for tTe Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis Tolding time due dates listed are calculated from tTe date sampled, altTougT Tolding times may Le extended after laLoratory extraction for some analytes. FTe due dates are tTe suggested dates tTat samples may Le Teld Lefore extraction or analysis and still Le considered valid.

Extraction and analysis dates are sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended dagger symLol j†( wTen outside suggested criteria. If tTe

## PCBs in Soil (continued)

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| FM1 | SE220482.009 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| FM2 | SE220482.010 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| FM3 | SE220482.011 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| QC3 | SE220482.012 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |

## 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 |
|---|---|---|---|---|---|---|---|---|
| HA2-1 | SE220482.003 | LB226735 | 03 Jun 2021 | 08 Jun 2021 | 30 Nov 2021 | 15 Jun 2021 | 30 Nov 2021 | 16 Jun 2021 |
| HA2-2 | SE220482.004 | LB226735 | 03 Jun 2021 | 08 Jun 2021 | 30 Nov 2021 | 15 Jun 2021 | 30 Nov 2021 | 16 Jun 2021 |
| MW10-1 | SE220482.006 | LB226735 | 03 Jun 2021 | 08 Jun 2021 | 30 Nov 2021 | 15 Jun 2021 | 30 Nov 2021 | 16 Jun 2021 |
| MW10-2 | SE220482.007 | LB226735 | 03 Jun 2021 | 08 Jun 2021 | 30 Nov 2021 | 15 Jun 2021 | 30 Nov 2021 | 16 Jun 2021 |
| MW10-3 | SE220482.008 | LB226735 | 03 Jun 2021 | 08 Jun 2021 | 30 Nov 2021 | 15 Jun 2021 | 30 Nov 2021 | 16 Jun 2021 |
| FM1 | SE220482.009 | LB226735 | 03 Jun 2021 | 08 Jun 2021 | 30 Nov 2021 | 15 Jun 2021 | 30 Nov 2021 | 16 Jun 2021 |
| FM2 | SE220482.010 | LB226735 | 03 Jun 2021 | 08 Jun 2021 | 30 Nov 2021 | 15 Jun 2021 | 30 Nov 2021 | 16 Jun 2021 |
| FM3 | SE220482.011 | LB226735 | 03 Jun 2021 | 08 Jun 2021 | 30 Nov 2021 | 15 Jun 2021 | 30 Nov 2021 | 16 Jun 2021 |
| QC3 | SE220482.012 | LB226735 | 03 Jun 2021 | 08 Jun 2021 | 30 Nov 2021 | 15 Jun 2021 | 30 Nov 2021 | 16 Jun 2021 |

## TRH (Total Recoverable Hydrocarbons) in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-2 | SE220482.002 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| HA2-1 | SE220482.003 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| HA2-2 | SE220482.004 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| MW10-1 | SE220482.006 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| MW10-2 | SE220482.007 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| MW10-3 | SE220482.008 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| FM1 | SE220482.009 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| FM2 | SE220482.010 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| FM3 | SE220482.011 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |
| QC3 | SE220482.012 | LB226424 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 08 Jun 2021 | 18 Jul 2021 | 15 Jun 2021 |

## VOC's in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA2-1 | SE220482.003 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| HA2-2 | SE220482.004 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| MW10-1 | SE220482.006 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| MW10-2 | SE220482.007 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| MW10-3 | SE220482.008 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| FM1 | SE220482.009 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| FM2 | SE220482.010 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| FM3 | SE220482.011 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| QC3 | SE220482.012 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |

## Volatile Petroleum Hydrocarbons in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA2-1 | SE220482.003 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| HA2-2 | SE220482.004 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| MW10-1 | SE220482.006 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| MW10-2 | SE220482.007 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| MW10-3 | SE220482.008 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| FM1 | SE220482.009 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| FM2 | SE220482.010 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| FM3 | SE220482.011 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |
| QC3 | SE220482.012 | LB226488 | 03 Jun 2021 | 08 Jun 2021 | 17 Jun 2021 | 09 Jun 2021 | 19 Jul 2021 | 15 Jun 2021 |

Surrogate results are evaluated against upper and lower limit criteria estaLlisTed in tTe SGS QA/QC plan jRef: MP-jAU(-[ENV]QU-022(. At least two of tTree routine level soil sample surrogate spike recoveries for BFEX/VOC are to Le witTin )0-130% wTere control cTarts Tave not Leen developed and witTin tTe estaLlisTed control limits for cTarted surrogates. Matrix effects may void tTis as an acceptance criterion. Water sample surrogate spike recoveries are to Le witTin 40-130%. FTe presence of emulsions, surfactants and particulates may void tTis as an acceptance criterion.

Result is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended reason identifer wTen outside suggested criteria. Refer to tTe footnotes section at tTe end of tTis 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) | HA1-2 | SE220482.002 | % | 60 - 130% | 108 |
| | MW10-2 | SE220482.007 | % | 60 - 130% | 107 |
| | FM2 | SE220482.010 | % | 60 - 130% | 102 |

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil** — Method: ME-(AU)-[ENV]AN420

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| 2-fluorobiphenyl (Surrogate) | HA2-1 | SE220482.003 | % | 70 - 130% | 93 |
| | HA2-2 | SE220482.004 | % | 70 - 130% | 90 |
| | MW10-1 | SE220482.006 | % | 70 - 130% | 89 |
| | MW10-2 | SE220482.007 | % | 70 - 130% | 90 |
| | MW10-3 | SE220482.008 | % | 70 - 130% | 88 |
| | FM1 | SE220482.009 | % | 70 - 130% | 91 |
| | FM2 | SE220482.010 | % | 70 - 130% | 90 |
| | FM3 | SE220482.011 | % | 70 - 130% | 92 |
| | QC3 | SE220482.012 | % | 70 - 130% | 92 |
| d14-p-terphenyl (Surrogate) | HA2-1 | SE220482.003 | % | 70 - 130% | 93 |
| | HA2-2 | SE220482.004 | % | 70 - 130% | 93 |
| | MW10-1 | SE220482.006 | % | 70 - 130% | 93 |
| | MW10-2 | SE220482.007 | % | 70 - 130% | 97 |
| | MW10-3 | SE220482.008 | % | 70 - 130% | 92 |
| | FM1 | SE220482.009 | % | 70 - 130% | 94 |
| | FM2 | SE220482.010 | % | 70 - 130% | 94 |
| | FM3 | SE220482.011 | % | 70 - 130% | 96 |
| | QC3 | SE220482.012 | % | 70 - 130% | 94 |
| d5-nitrobenzene (Surrogate) | HA2-1 | SE220482.003 | % | 70 - 130% | 99 |
| | HA2-2 | SE220482.004 | % | 70 - 130% | 103 |
| | MW10-1 | SE220482.006 | % | 70 - 130% | 99 |
| | MW10-2 | SE220482.007 | % | 70 - 130% | 100 |
| | MW10-3 | SE220482.008 | % | 70 - 130% | 104 |
| | FM1 | SE220482.009 | % | 70 - 130% | 97 |
| | FM2 | SE220482.010 | % | 70 - 130% | 94 |
| | FM3 | SE220482.011 | % | 70 - 130% | 114 |
| | QC3 | SE220482.012 | % | 70 - 130% | 101 |

**PCBs in Soil** — Method: ME-(AU)-[ENV]AN420

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Tetrachloro-m-xylene (TCMX) (Surrogate) | HA1-2 | SE220482.002 | % | 60 - 130% | 108 |
| | MW10-2 | SE220482.007 | % | 60 - 130% | 107 |
| | FM2 | SE220482.010 | % | 60 - 130% | 102 |

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples** — Method: MA-1523

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 102 |
| | QCB | SE220482.014 | % | 10 - 150% | 91 |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 126 |
| | QCB | SE220482.014 | % | 10 - 150% | 115 |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 141 |
| | QCB | SE220482.014 | % | 10 - 150% | 130 |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 137 |
| | QCB | SE220482.014 | % | 10 - 150% | 128 |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 123 |
| | QCB | SE220482.014 | % | 10 - 150% | 101 |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 111 |
| | QCB | SE220482.014 | % | 10 - 150% | 112 |
| (13C3-PFBS) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 120 |
| | QCB | SE220482.014 | % | 10 - 150% | 111 |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 99 |
| | QCB | SE220482.014 | % | 10 - 150% | 110 |
| (13C4_PFOA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 101 |
| | QCB | SE220482.014 | % | 10 - 150% | 99 |
| (13C4-PFBA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 100 |
| | QCB | SE220482.014 | % | 10 - 150% | 101 |

Surrogate results are evaluated against upper and lower limit criteria estaLlisTed in tTe SGS QA/QC plan jRef: MP-jAU(-[ENV]QU-022(. At least two of tTree routine level soil sample surrogate spike recoveries for BFEX/VOC are to Le witTin )0-130% wTere control cTarts Tave not Leen developed and witTin tTe estaLlisTed control limits for cTarted surrogates. Matrix effects may void tTis as an acceptance criterion. Water sample surrogate spike recoveries are to Le witTin 40-130%. FTe presence of emulsions, surfactants and particulates may void tTis as an acceptance criterion.

Result is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended reason identifer wTen outside suggested criteria. Refer to tTe footnotes section at tTe end of tTis report for failure reasons.

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples (continued)** — Method: MA-1523

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C4-PFHpA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 100 |
| | QCB | SE220482.014 | % | 10 - 150% | 97 |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 93 |
| | QCB | SE220482.014 | % | 10 - 150% | 94 |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 119 |
| | QCB | SE220482.014 | % | 10 - 150% | 120 |
| (13C6-PFDA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 120 |
| | QCB | SE220482.014 | % | 10 - 150% | 116 |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 114 |
| | QCB | SE220482.014 | % | 10 - 150% | 92 |
| (13C8-PFOS) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 110 |
| | QCB | SE220482.014 | % | 10 - 150% | 94 |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 71 |
| | QCB | SE220482.014 | % | 10 - 150% | 59 |
| (13C9-PFNA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 108 |
| | QCB | SE220482.014 | % | 10 - 150% | 114 |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 59 |
| | QCB | SE220482.014 | % | 10 - 150% | 50 |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 90 |
| | QCB | SE220482.014 | % | 10 - 150% | 86 |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 54 |
| | QCB | SE220482.014 | % | 10 - 150% | 62 |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 99 |
| | QCB | SE220482.014 | % | 10 - 150% | 98 |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 56 |
| | QCB | SE220482.014 | % | 10 - 150% | 51 |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard | QCA | SE220482.013 | % | 10 - 150% | 51 |
| | QCB | SE220482.014 | % | 10 - 150% | 47 |

**Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples** — Method: MA-1523

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 130% | 28 |
| | HA1-2 | SE220482.002 | % | 0 - 130% | 40 |
| | HA2-1 | SE220482.003 | % | 0 - 130% | 33 |
| | HA2-2 | SE220482.004 | % | 0 - 130% | 39 |
| | HA3-1 | SE220482.005 | % | 0 - 130% | 39 |
| | MW10-1 | SE220482.006 | % | 0 - 130% | 34 |
| | MW10-2 | SE220482.007 | % | 0 - 130% | 34 |
| | MW10-3 | SE220482.008 | % | 0 - 130% | 48 |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 85 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 82 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 79 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 74 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 95 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 91 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 74 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 79 |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 89 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 86 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 82 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 87 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 120 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 98 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 85 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 81 |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 56 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 81 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 72 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 83 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 94 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 81 |

Surrogate results are evaluated against upper and lower limit criteria estaLlisTed in tTe SGS QA/QC plan jRef: MP-jAU(-[ENV]QU-022(. At least two of tTree routine level soil sample surrogate spike recoveries for BFEX/VOC are to Le witTin )0-130% wTere control cTarts Tave not Leen developed and witTin tTe estaLlisTed control limits for cTarted surrogates. Matrix effects may void tTis as an acceptance criterion. Water sample surrogate spike recoveries are to Le witTin 40-130%. FTe presence of emulsions, surfactants and particulates may void tTis as an acceptance criterion.

Result is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended reason identifer wTen outside suggested criteria. Refer to tTe footnotes section at tTe end of tTis report for failure reasons.

**Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)** **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard | MW10-2 | SE220482.007 | % | 0 - 150% | 87 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 65 |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 99 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 96 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 97 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 98 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 111 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 97 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 92 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 109 |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 6 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 14 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 10 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 16 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 11 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 11 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 9 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 20 |
| (13C3-PFBS) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 120 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 128 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 122 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 115 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 128 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 132 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 129 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 126 |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 108 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 118 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 124 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 110 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 124 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 127 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 119 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 101 |
| (13C4_PFOA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 111 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 102 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 106 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 115 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 103 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 111 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 101 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 106 |
| (13C4-PFBA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 111 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 112 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 110 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 108 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 111 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 111 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 109 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 111 |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 137 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 102 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 117 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 110 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 114 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 114 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 107 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 117 |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 125 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 111 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 112 |

Surrogate results are evaluated against upper and lower limit criteria estaLlisTed in tTe SGS QA/QC plan jRef: MP-jAU(-[ENV]QU-022(. At least two of tTree routine level soil sample surrogate spike recoveries for BFEX/VOC are to Le witTin )0-130% wTere control cTarts Tave not Leen developed and witTin tTe estaLlisTed control limits for cTarted surrogates. Matrix effects may void tTis as an acceptance criterion. Water sample surrogate spike recoveries are to Le witTin 40-130%. FTe presence of emulsions, surfactants and particulates may void tTis as an acceptance criterion.

Result is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended reason identifer wTen outside suggested criteria. Refer to tTe footnotes section at tTe end of tTis report for failure reasons.

**Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)** **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C5-PFHxA) Isotopically Labelled Internal Recovery Standard | HA2-2 | SE220482.004 | % | 0 - 150% | 114 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 116 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 121 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 108 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 118 |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 131 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 129 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 132 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 126 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 133 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 129 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 139 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 129 |
| (13C6-PFDA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 137 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 133 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 129 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 118 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 123 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 121 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 114 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 128 |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 94 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 95 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 105 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 103 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 113 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 103 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 103 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 118 |
| (13C8-PFOS) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 126 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 104 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 102 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 131 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 125 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 102 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 96 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 104 |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 99 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 106 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 82 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 96 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 91 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 79 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 72 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 94 |
| (13C9-PFNA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 122 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 104 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 97 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 114 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 115 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 108 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 123 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 107 |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 56 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 65 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 55 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 70 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 48 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 57 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 44 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 75 |

Surrogate results are evaluated against upper and lower limit criteria estaLlisTed in tTe SGS QA/QC plan jRef: MP-jAU(-[ENV]QU-022(. At least two of tTree routine level soil sample surrogate spike recoveries for BFEX/VOC are to Le witTin )0-130% wTere control cTarts Tave not Leen developed and witTin tTe estaLlisTed control limits for cTarted surrogates. Matrix effects may void tTis as an acceptance criterion. Water sample surrogate spike recoveries are to Le witTin 40-130%. FTe presence of emulsions, surfactants and particulates may void tTis as an acceptance criterion.

Result is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended reason identifer wTen outside suggested criteria. Refer to tTe footnotes section at tTe end of tTis report for failure reasons.

**Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)** — Method: MA-1523

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 70 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 69 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 81 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 89 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 76 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 52 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 57 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 82 |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 39 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 48 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 49 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 53 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 36 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 51 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 28 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 50 |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 84 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 63 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 56 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 80 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 73 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 51 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 68 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 80 |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 85 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 68 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 63 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 78 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 60 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 58 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 52 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 76 |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard | HA1-1 | SE220482.001 | % | 0 - 150% | 56 |
| | HA1-2 | SE220482.002 | % | 0 - 150% | 57 |
| | HA2-1 | SE220482.003 | % | 0 - 150% | 55 |
| | HA2-2 | SE220482.004 | % | 0 - 150% | 63 |
| | HA3-1 | SE220482.005 | % | 0 - 150% | 58 |
| | MW10-1 | SE220482.006 | % | 0 - 150% | 55 |
| | MW10-2 | SE220482.007 | % | 0 - 150% | 45 |
| | MW10-3 | SE220482.008 | % | 0 - 150% | 68 |

**VOC's in Soil** — Method: ME-(AU)-[ENV]AN433

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Bromofluorobenzene (Surrogate) | HA2-1 | SE220482.003 | % | 60 - 130% | 76 |
| | HA2-2 | SE220482.004 | % | 60 - 130% | 76 |
| | MW10-1 | SE220482.006 | % | 60 - 130% | 78 |
| | MW10-2 | SE220482.007 | % | 60 - 130% | 71 |
| | MW10-3 | SE220482.008 | % | 60 - 130% | 67 |
| | FM1 | SE220482.009 | % | 60 - 130% | 78 |
| | FM2 | SE220482.010 | % | 60 - 130% | 76 |
| | FM3 | SE220482.011 | % | 60 - 130% | 77 |
| | QC3 | SE220482.012 | % | 60 - 130% | 77 |
| d4-1,2-dichloroethane (Surrogate) | HA2-1 | SE220482.003 | % | 60 - 130% | 88 |
| | HA2-2 | SE220482.004 | % | 60 - 130% | 91 |
| | MW10-1 | SE220482.006 | % | 60 - 130% | 92 |
| | MW10-2 | SE220482.007 | % | 60 - 130% | 84 |
| | MW10-3 | SE220482.008 | % | 60 - 130% | 81 |
| | FM1 | SE220482.009 | % | 60 - 130% | 92 |
| | FM2 | SE220482.010 | % | 60 - 130% | 91 |
| | FM3 | SE220482.011 | % | 60 - 130% | 93 |
| | QC3 | SE220482.012 | % | 60 - 130% | 91 |

Surrogate results are evaluated against upper and lower limit criteria estaLlisTed in tTe SGS QA/QC plan jRef: MP-jAU(-[ENV]QU-022(. At least two of tTree routine level soil sample surrogate spike recoveries for BFEX/VOC are to Le witTin )0-130% wTere control cTarts Tave not Leen developed and witTin tTe estaLlisTed control limits for cTarted surrogates. Matrix effects may void tTis as an acceptance criterion. Water sample surrogate spike recoveries are to Le witTin 40-130%. FTe presence of emulsions, surfactants and particulates may void tTis as an acceptance criterion.

Result is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended reason identifer wTen outside suggested criteria. Refer to tTe footnotes section at tTe end of tTis 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) | HA2-1 | SE220482.003 | % | 60 - 130% | 87 |
| | HA2-2 | SE220482.004 | % | 60 - 130% | 89 |
| | MW10-1 | SE220482.006 | % | 60 - 130% | 91 |
| | MW10-2 | SE220482.007 | % | 60 - 130% | 83 |
| | MW10-3 | SE220482.008 | % | 60 - 130% | 79 |
| | FM1 | SE220482.009 | % | 60 - 130% | 92 |
| | FM2 | SE220482.010 | % | 60 - 130% | 90 |
| | FM3 | SE220482.011 | % | 60 - 130% | 92 |
| | QC3 | SE220482.012 | % | 60 - 130% | 91 |

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Bromofluorobenzene (Surrogate) | HA2-1 | SE220482.003 | % | 60 - 130% | 76 |
| | HA2-2 | SE220482.004 | % | 60 - 130% | 76 |
| | MW10-1 | SE220482.006 | % | 60 - 130% | 78 |
| | MW10-2 | SE220482.007 | % | 60 - 130% | 71 |
| | MW10-3 | SE220482.008 | % | 60 - 130% | 67 |
| | FM1 | SE220482.009 | % | 60 - 130% | 78 |
| | FM2 | SE220482.010 | % | 60 - 130% | 76 |
| | FM3 | SE220482.011 | % | 60 - 130% | 77 |
| | QC3 | SE220482.012 | % | 60 - 130% | 77 |
| d4-1,2-dichloroethane (Surrogate) | HA2-1 | SE220482.003 | % | 60 - 130% | 88 |
| | HA2-2 | SE220482.004 | % | 60 - 130% | 91 |
| | MW10-1 | SE220482.006 | % | 60 - 130% | 92 |
| | MW10-2 | SE220482.007 | % | 60 - 130% | 84 |
| | MW10-3 | SE220482.008 | % | 60 - 130% | 81 |
| | FM1 | SE220482.009 | % | 60 - 130% | 92 |
| | FM2 | SE220482.010 | % | 60 - 130% | 91 |
| | FM3 | SE220482.011 | % | 60 - 130% | 93 |
| | QC3 | SE220482.012 | % | 60 - 130% | 91 |
| d8-toluene (Surrogate) | HA2-1 | SE220482.003 | % | 60 - 130% | 87 |
| | HA2-2 | SE220482.004 | % | 60 - 130% | 89 |
| | MW10-1 | SE220482.006 | % | 60 - 130% | 91 |
| | MW10-2 | SE220482.007 | % | 60 - 130% | 83 |
| | MW10-3 | SE220482.008 | % | 60 - 130% | 79 |
| | FM1 | SE220482.009 | % | 60 - 130% | 92 |
| | FM2 | SE220482.010 | % | 60 - 130% | 90 |
| | FM3 | SE220482.011 | % | 60 - 130% | 92 |
| | QC3 | SE220482.012 | % | 60 - 130% | 91 |

Blank results are evaluated against tTe limit of reporting jhOR(, for tTe cTosen metTod and its associated instrumentation, typically 2.5 times tTe statistically determined metTod detection limit jMDh(.

Result is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended dagger symLol j†( wTen outside suggested criteria.

## Mercury in Soil

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB226745.001 | Mercury | mg/kg | 0.05 | <0.05 |

## OC Pesticides in Soil

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB226424.001 | | Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 |
| | | Alpha BHC | mg/kg | 0.1 | <0.1 |
| | | Lindane | mg/kg | 0.1 | <0.1 |
| | | Heptachlor | mg/kg | 0.1 | <0.1 |
| | | Aldrin | mg/kg | 0.1 | <0.1 |
| | | Beta BHC | mg/kg | 0.1 | <0.1 |
| | | Delta BHC | mg/kg | 0.1 | <0.1 |
| | | Heptachlor epoxide | mg/kg | 0.1 | <0.1 |
| | | Alpha Endosulfan | mg/kg | 0.2 | <0.2 |
| | | Gamma Chlordane | mg/kg | 0.1 | <0.1 |
| | | Alpha Chlordane | mg/kg | 0.1 | <0.1 |
| | | 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 |
| | | p,p'-DDT | mg/kg | 0.1 | <0.1 |
| | | Endosulfan sulphate | mg/kg | 0.1 | <0.1 |
| | | Endrin Aldehyde | mg/kg | 0.1 | <0.1 |
| | | Methoxychlor | mg/kg | 0.1 | <0.1 |
| | | Endrin Ketone | mg/kg | 0.1 | <0.1 |
| | | Isodrin | mg/kg | 0.1 | <0.1 |
| | | Mirex | mg/kg | 0.1 | <0.1 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 97 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB226424.001 | | 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) | % | - | 107 |
| | | 2-fluorobiphenyl (Surrogate) | % | - | 93 |
| | | d14-p-terphenyl (Surrogate) | % | - | 97 |

## PCBs in Soil

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB226424.001 | 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 |

Blank results are evaluated against tTe limit of reporting jhOR(, for tTe cTosen metTod and its associated instrumentation, typically 2.5 times tTe statistically determined metTod detection limit jMDh(.

Result is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended dagger symLol j†( wTen outside suggested criteria.

**PCBs in Soil (continued)** — Method: ME-(AU)-[ENV]AN420

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB226424.001 | | 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 | <1 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 97 |

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES** — Method: ME-(AU)-[ENV]AN040/AN320

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB226735.001 | | 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 |

**TRH (Total Recoverable Hydrocarbons) in Soil** — Method: ME-(AU)-[ENV]AN403

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB226424.001 | | 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 |
|---|---|---|---|---|---|
| LB226488.001 | 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 | mg/kg | 0.1 | <0.1 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | % | - | 97 |
| | | d8-toluene (Surrogate) | % | - | 95 |
| | | Bromofluorobenzene (Surrogate) | % | - | 87 |
| | 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 |
|---|---|---|---|---|---|
| LB226488.001 | | TRH C6-C9 | mg/kg | 20 | <20 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | % | - | 97 |

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

FTe RPD is evaluated against tTe Maximum AllowaLle Difference jMAD( criteria and can Le grapTically represented Ly a curve calculated from tTe Statistical Detection himit jSDh( and himiting RepeataLility jhR( using tTe formula: MAD = 100 x SDh / Mean + hR

WTere tTe Maximum AllowaLle Difference evaluates to a numLer larger tTan 200 it is displayed as 200.

RPD is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended reason identifer wTen outside suggested criteria. Refer to tTe footnotes section at tTe end of tTis report for failure reasons.

NOFE: FTe RPD reported is calculated from tTe unrounded data for tTe original and replicate result. Manual calculation of tTe RPD from tTe rounded data reported may

## Mercury in Soil

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE220481.001 | LB226745.014 | Mercury | mg/kg | 0.05 | <0.05 | <0.05 | 142 | 0 |
| SE220641.001 | LB226745.024 | Mercury | mg/kg | 0.05 | <0.05 | 0.06 | 196 | 12 |

## Moisture Content

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE220477.009 | LB226588.021 | % Moisture | %w/w | 1 | 9.0 | 9.8 | 41 | 8 |
| SE220482.012 | LB226588.011 | % Moisture | %w/w | 1 | 3.7 | 4.1 | 56 | 9 |

## OC Pesticides in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220482.010 | LB226424.028 | | Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Alpha BHC | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Lindane | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Heptachlor | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Aldrin | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Beta BHC | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Delta BHC | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Heptachlor epoxide | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | o,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Alpha Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Gamma Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Alpha Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | trans-Nonachlor | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | p,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Dieldrin | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Endrin | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | o,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | o,p'-DDT | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Beta Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | p,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | p,p'-DDT | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Endosulfan sulphate | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Endrin Aldehyde | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Methoxychlor | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Endrin Ketone | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Isodrin | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Mirex | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Total CLP OC Pesticides | mg/kg | 1 | <1 | <1 | 200 | 0 |
| | | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0.15 | 0.16 | 30 | 5 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE220482.010 | LB226424.027 | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 162 | 0 |
| | | Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 170 | 0 |
| | | Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 173 | 0 |
| | | Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | 164 | 0 |
| | | Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 156 | 0 |
| | | Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 199 | 0 |
| | | Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |

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

FTe RPD is evaluated against tTe Maximum AllowaLle Difference jMAD( criteria and can Le grapTically represented Ly a curve calculated from tTe Statistical Detection himit jSDh( and himiting RepeataLility jhR( using tTe formula: MAD = 100 x SDh / Mean + hR

WTere tTe Maximum AllowaLle Difference evaluates to a numLer larger tTan 200 it is displayed as 200.

RPD is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended reason identifer wTen outside suggested criteria. Refer to tTe footnotes section at tTe end of tTis report for failure reasons.

NOFE: FTe RPD reported is calculated from tTe unrounded data for tTe original and replicate result. Manual calculation of tTe RPD from tTe rounded data reported may

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

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220482.010 | LB226424.027 | | Benzo(ghi)perylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=0 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | mg/kg | 0.3 | <0.3 | <0.3 | 134 | 0 |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | mg/kg | 0.2 | <0.2 | <0.2 | 175 | 0 |
| | | | Total PAH (18) | mg/kg | 0.8 | <0.8 | <0.8 | 200 | 0 |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.5 | 0.5 | 30 | 9 |
| | | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 30 | 1 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.5 | 0.5 | 30 | 1 |

## PCBs in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220482.010 | LB226424.028 | | Arochlor 1016 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1221 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1232 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1242 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1248 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1254 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1260 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1262 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1268 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Total PCBs (Arochlors) | mg/kg | 1 | <1 | <1 | 200 | 0 |
| | | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0 | 0 | 30 | 5 |

## 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 % |
|---|---|---|---|---|---|---|---|---|---|
| SE220481.001 | LB226735.014 | | Arsenic, As | mg/kg | 1 | 2 | 3 | 71 | 8 |
| | | | Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | | Chromium, Cr | mg/kg | 0.5 | 2.1 | 2.4 | 52 | 12 |
| | | | Copper, Cu | mg/kg | 0.5 | 3.2 | 3.5 | 45 | 9 |
| | | | Nickel, Ni | mg/kg | 0.5 | 2.7 | 2.9 | 48 | 5 |
| | | | Lead, Pb | mg/kg | 1 | 7 | 11 | 42 | 49 ② |
| | | | Zinc, Zn | mg/kg | 2 | 32 | 38 | 36 | 19 |
| SE220641.001 | LB226735.024 | | Arsenic, As | mg/kg | 1 | <1 | <1 | 200 | 0 |
| | | | Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | | Chromium, Cr | mg/kg | 0.5 | 0.5 | 1.4 | 82 | 87 ③ |
| | | | Copper, Cu | mg/kg | 0.5 | 6.8 | 9.9 | 36 | 37 ② |
| | | | Nickel, Ni | mg/kg | 0.5 | 0.9 | 3.8 | 51 | 121 ② |
| | | | Lead, Pb | mg/kg | 1 | 4 | 6 | 50 | 22 |
| | | | Zinc, Zn | mg/kg | 2 | 34 | 32 | 36 | 5 |

## TRH (Total Recoverable Hydrocarbons) in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220477.009 | LB226424.025 | | TRH C10-C14 | mg/kg | 20 | <20 | <20 | 200 | 0 |
| | | | TRH C15-C28 | mg/kg | 45 | <45 | <45 | 200 | 0 |
| | | | TRH C29-C36 | mg/kg | 45 | <45 | <45 | 200 | 0 |
| | | | TRH C37-C40 | mg/kg | 100 | <100 | <100 | 200 | 0 |
| | | | TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | 200 | 0 |
| | | | TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | <210 | 200 | 0 |
| | | TRH F Bands | TRH >C10-C16 | mg/kg | 25 | <25 | <25 | 200 | 0 |
| | | | TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | <25 | <25 | 200 | 0 |
| | | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | 200 | 0 |
| | | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | 200 | 0 |
| SE220482.010 | LB226424.027 | | TRH C10-C14 | mg/kg | 20 | <20 | <20 | 200 | 0 |
| | | | TRH C15-C28 | mg/kg | 45 | <45 | <45 | 200 | 0 |
| | | | TRH C29-C36 | mg/kg | 45 | <45 | <45 | 200 | 0 |
| | | | TRH C37-C40 | mg/kg | 100 | <100 | <100 | 200 | 0 |
| | | | TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | 200 | 0 |
| | | | TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | <210 | 200 | 0 |
| | | TRH F Bands | TRH >C10-C16 | mg/kg | 25 | <25 | <25 | 200 | 0 |
| | | | TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | <25 | <25 | 200 | 0 |
| | | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | 200 | 0 |
| | | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | 200 | 0 |

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

FTe RPD is evaluated against tTe Maximum AllowaLle Difference jMAD( criteria and can Le grapTically represented Ly a curve calculated from tTe Statistical Detection himit jSDh( and himiting RepeataLility jhR( using tTe formula: MAD = 100 x SDh / Mean + hR

WTere tTe Maximum AllowaLle Difference evaluates to a numLer larger tTan 200 it is displayed as 200.

RPD is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended reason identifer wTen outside suggested criteria. Refer to tTe footnotes section at tTe end of tTis report for failure reasons.

NOFE: FTe RPD reported is calculated from tTe unrounded data for tTe original and replicate result. Manual calculation of tTe RPD from tTe rounded data reported may

## VOC's in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220477.009 | LB226488.024 | Monocyclic | Benzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Aromatic | Toluene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 8.8 | 9.0 | 50 | 2 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 8.8 | 9.0 | 50 | 2 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.4 | 7.5 | 50 | 1 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | | Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | 200 | 0 |
| SE220482.012 | LB226488.014 | Monocyclic | Benzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Aromatic | Toluene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 9.1 | 9.3 | 50 | 2 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 9.1 | 9.3 | 50 | 2 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.7 | 7.8 | 50 | 1 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | | Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | 200 | 0 |

## Volatile Petroleum Hydrocarbons in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220477.009 | LB226488.024 | | 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 | - | 8.8 | 9.0 | 30 | 2 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 8.8 | 9.0 | 30 | 2 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.4 | 7.5 | 30 | 1 |
| | | 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 |
| SE220482.012 | LB226488.014 | | TRH C6-C10 | mg/kg | 25 | <25 | <25 | 200 | 0 |
| | | | TRH C6-C9 | mg/kg | 20 | <20 | <20 | 200 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 9.1 | 9.3 | 30 | 2 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 9.1 | 9.3 | 30 | 2 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 7.7 | 7.8 | 30 | 1 |
| | | 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 |

haLoratory Control Standard jhCS( results are evaluated against an expected result, typically tTe concentration of analyte spiked into tTe control during tTe sample preparation stage, producing a percentage recovery. FTe criteria applied to tTe percentage recovery is estaLlisTed in tTe SGS QA /QC plan jRef: MP-jAU(-[ENV]QU-022(. 7or more information refer to tTe footnotes in tTe concluding page of tTis report.

Recovery is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended dagger symLol j†( wTen outside suggested criteria.

### Mercury in Soil

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

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB226745.002 | Mercury | mg/kg | 0.05 | 0.23 | 0.2 | 70 - 130 | 115 |

### OC Pesticides in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226424.002 | | Heptachlor | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 99 |
| | | Aldrin | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 88 |
| | | Delta BHC | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 96 |
| | | Dieldrin | mg/kg | 0.2 | <0.2 | 0.2 | 60 - 140 | 86 |
| | | Endrin | mg/kg | 0.2 | 0.2 | 0.2 | 60 - 140 | 100 |
| | | p,p'-DDT | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 99 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0.14 | 0.15 | 40 - 130 | 96 |

### PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226424.002 | | Naphthalene | mg/kg | 0.1 | 3.7 | 4 | 60 - 140 | 92 |
| | | Acenaphthylene | mg/kg | 0.1 | 3.8 | 4 | 60 - 140 | 94 |
| | | Acenaphthene | mg/kg | 0.1 | 3.7 | 4 | 60 - 140 | 93 |
| | | Phenanthrene | mg/kg | 0.1 | 3.8 | 4 | 60 - 140 | 94 |
| | | Anthracene | mg/kg | 0.1 | 3.7 | 4 | 60 - 140 | 92 |
| | | Fluoranthene | mg/kg | 0.1 | 3.7 | 4 | 60 - 140 | 92 |
| | | Pyrene | mg/kg | 0.1 | 3.9 | 4 | 60 - 140 | 97 |
| | | Benzo(a)pyrene | mg/kg | 0.1 | 3.9 | 4 | 60 - 140 | 99 |
| | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.6 | 0.5 | 40 - 130 | 111 |
| | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.5 | 0.5 | 40 - 130 | 91 |
| | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 87 |

### PCBs in Soil

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

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB226424.002 | Arochlor 1260 | mg/kg | 0.2 | 0.5 | 0.4 | 60 - 140 | 136 |

### 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 % |
|---|---|---|---|---|---|---|---|
| LB226735.002 | Arsenic, As | mg/kg | 1 | 340 | 318.22 | 80 - 120 | 105 |
| | Cadmium, Cd | mg/kg | 0.3 | 5.2 | 4.81 | 70 - 130 | 109 |
| | Chromium, Cr | mg/kg | 0.5 | 39 | 38.31 | 80 - 120 | 101 |
| | Copper, Cu | mg/kg | 0.5 | 320 | 290 | 80 - 120 | 109 |
| | Nickel, Ni | mg/kg | 0.5 | 190 | 187 | 80 - 120 | 102 |
| | Lead, Pb | mg/kg | 1 | 92 | 89.9 | 80 - 120 | 102 |
| | Zinc, Zn | mg/kg | 2 | 290 | 273 | 80 - 120 | 106 |

### TRH (Total Recoverable Hydrocarbons) in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226424.002 | | TRH C10-C14 | mg/kg | 20 | 37 | 40 | 60 - 140 | 93 |
| | | TRH C15-C28 | mg/kg | 45 | <45 | 40 | 60 - 140 | 93 |
| | | TRH C29-C36 | mg/kg | 45 | <45 | 40 | 60 - 140 | 83 |
| | TRH F Bands | TRH >C10-C16 | mg/kg | 25 | 37 | 40 | 60 - 140 | 93 |
| | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | 40 | 60 - 140 | 93 |
| | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | 20 | 60 - 140 | 80 |

### VOC's in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226488.002 | Monocyclic Aromatic | Benzene | mg/kg | 0.1 | 4.1 | 5 | 60 - 140 | 82 |
| | | Toluene | mg/kg | 0.1 | 4.1 | 5 | 60 - 140 | 83 |
| | | Ethylbenzene | mg/kg | 0.1 | 4.3 | 5 | 60 - 140 | 86 |
| | | m/p-xylene | mg/kg | 0.2 | 8.6 | 10 | 60 - 140 | 86 |
| | | o-xylene | mg/kg | 0.1 | 4.3 | 5 | 60 - 140 | 86 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 9.8 | 10 | 70 - 130 | 98 |
| | | d8-toluene (Surrogate) | mg/kg | - | 9.8 | 10 | 70 - 130 | 98 |
| | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.8 | 10 | 70 - 130 | 88 |

haLoratory Control Standard jhCS( results are evaluated against an expected result, typically tTe concentration of analyte spiked into tTe control during tTe sample preparation stage, producing a percentage recovery. FTe criteria applied to tTe percentage recovery is estaLlisTed in tTe SGS QA /QC plan jRef: MP-jAU(-[ENV]QU-022(. 7or more information refer to tTe footnotes in tTe concluding page of tTis report.

Recovery is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended dagger symLol j†( wTen outside suggested criteria.

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226488.002 | | TRH C6-C10 | mg/kg | 25 | 86 | 92.5 | 60 - 140 | 93 |
| | | TRH C6-C9 | mg/kg | 20 | 76 | 80 | 60 - 140 | 95 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 9.8 | 10 | 70 - 130 | 98 |
| | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.8 | 10 | 70 - 130 | 88 |
| | VPH F Bands | TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | 60 | 62.5 | 60 - 140 | 96 |

Matrix Spike jMS( results are evaluated as tTe percentage recovery of an expected result, typically tTe concentration of analyte spiked into a field suL -sample during tTe sample preparation stage. FTe original sample's result is suLtracted from tTe suL-sample result Lefore determining tTe percentage recovery. FTe criteria applied to tTe percentage recovery is estaLlisTed in tTe SGS QA/QC plan jref: MP-jAU(-[ENV]QU-022(. 7or more information refer to tTe footnotes in tTe concluding page of tTis report.

Recovery is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended reason identifer wTen outside suggested criteria. Refer to tTe footnotes section at tTe end of tTis report for failure reasons.

## Mercury in Soil

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

| QC Sample | Sample Number | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE220482.003 | LB226745.004 | Mercury | mg/kg | 0.05 | 0.24 | <0.05 | 0.2 | 111 |

## OC Pesticides in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE220472.001 | LB226424.004 | | Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Alpha BHC | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Lindane | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Heptachlor | mg/kg | 0.1 | 0.2 | <0.1 | 0.2 | 98 |
| | | | Aldrin | mg/kg | 0.1 | 0.2 | <0.1 | 0.2 | 95 |
| | | | Beta BHC | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Delta BHC | mg/kg | 0.1 | 0.2 | <0.1 | 0.2 | 92 |
| | | | Heptachlor epoxide | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | o,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Alpha Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Gamma Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Alpha Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | trans-Nonachlor | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | p,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Dieldrin | mg/kg | 0.2 | <0.2 | <0.2 | 0.2 | 95 |
| | | | Endrin | mg/kg | 0.2 | 0.2 | <0.2 | 0.2 | 105 |
| | | | o,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | o,p'-DDT | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Beta Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | p,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | p,p'-DDT | mg/kg | 0.1 | 0.2 | <0.1 | 0.2 | 104 |
| | | | Endosulfan sulphate | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Endrin Aldehyde | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Methoxychlor | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Endrin Ketone | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Isodrin | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Mirex | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Total CLP OC Pesticides | mg/kg | 1 | 1 | <1 | - | - |
| | | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0.15 | 0.15 | - | 101 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE220472.001 | LB226424.004 | | Naphthalene | mg/kg | 0.1 | 3.7 | <0.1 | 4 | 92 |
| | | | 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 | 3.7 | <0.1 | 4 | 93 |
| | | | Acenaphthene | mg/kg | 0.1 | 3.8 | <0.1 | 4 | 94 |
| | | | Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | | Phenanthrene | mg/kg | 0.1 | 4.0 | <0.1 | 4 | 99 |
| | | | Anthracene | mg/kg | 0.1 | 3.8 | <0.1 | 4 | 93 |
| | | | Fluoranthene | mg/kg | 0.1 | 3.9 | <0.1 | 4 | 97 |
| | | | Pyrene | mg/kg | 0.1 | 4.0 | <0.1 | 4 | 99 |
| | | | 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 | 3.8 | <0.1 | 4 | 96 |
| | | | 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 | 3.8 | <0.2 | - | - |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 0.3 | 4.0 | <0.3 | - | - |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | TEQ (mg/kg) | 0.2 | 3.9 | <0.2 | - | - |
| | | | Total PAH (18) | mg/kg | 0.8 | 31 | <0.8 | - | - |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.5 | 0.5 | - | 100 |

Matrix Spike jMS( results are evaluated as tTe percentage recovery of an expected result, typically tTe concentration of analyte spiked into a field suL -sample during tTe sample preparation stage. FTe original sample's result is suLtracted from tTe suL-sample result Lefore determining tTe percentage recovery. FTe criteria applied to tTe percentage recovery is estaLlisTed in tTe SGS QA/QC plan jref: MP-jAU(-[ENV]QU-022(. 7or more information refer to tTe footnotes in tTe concluding page of tTis report.

Recovery is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended reason identifer wTen outside suggested criteria. Refer to tTe footnotes section at tTe end of tTis report for failure reasons.

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

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE220472.001 | LB226424.004 | Surrogates | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.4 | 0.4 | - | 89 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | - | 85 |

## PCBs in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE220472.001 | LB226424.004 | | Arochlor 1016 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Arochlor 1221 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Arochlor 1232 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Arochlor 1242 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Arochlor 1248 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Arochlor 1254 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Arochlor 1260 | mg/kg | 0.2 | 0.5 | <0.2 | 0.4 | 131 |
| | | | Arochlor 1262 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Arochlor 1268 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Total PCBs (Arochlors) | mg/kg | 1 | <1 | <1 | - | - |
| | | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0 | 0 | - | 101 |

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

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE220482.003 | LB226735.004 | | Arsenic, As | mg/kg | 1 | 51 | 16 | 50 | 72 |
| | | | Cadmium, Cd | mg/kg | 0.3 | 45 | 0.4 | 50 | 89 |
| | | | Chromium, Cr | mg/kg | 0.5 | 170 | 110 | 50 | 104 |
| | | | Copper, Cu | mg/kg | 0.5 | 96 | 62 | 50 | 67 ⑨ |
| | | | Nickel, Ni | mg/kg | 0.5 | 57 | 15 | 50 | 84 |
| | | | Lead, Pb | mg/kg | 1 | 100 | 66 | 50 | 68 ⑨ |
| | | | Zinc, Zn | mg/kg | 2 | 1400 | 1800 | 50 | -669 ⑤ |

## TRH (Total Recoverable Hydrocarbons) in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE220472.001 | LB226424.004 | | TRH C10-C14 | mg/kg | 20 | 37 | <20 | 40 | 93 |
| | | | TRH C15-C28 | mg/kg | 45 | <45 | <45 | 40 | 93 |
| | | | TRH C29-C36 | mg/kg | 45 | <45 | <45 | 40 | 83 |
| | | | TRH C37-C40 | mg/kg | 100 | <100 | <100 | - | - |
| | | | TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | - | - |
| | | | TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | <210 | - | - |
| | | TRH F | TRH >C10-C16 | mg/kg | 25 | 37 | <25 | 40 | 93 |
| | | Bands | TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | 33 | <25 | - | - |
| | | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | 40 | 93 |
| | | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | - | - |

## VOC's in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE220472.001 | LB226488.004 | Monocyclic | Benzene | mg/kg | 0.1 | 3.6 | <0.1 | 5 | 71 |
| | | Aromatic | Toluene | mg/kg | 0.1 | 3.7 | <0.1 | 5 | 73 |
| | | | Ethylbenzene | mg/kg | 0.1 | 3.9 | <0.1 | 5 | 78 |
| | | | m/p-xylene | mg/kg | 0.2 | 8.0 | <0.2 | 10 | 79 |
| | | | o-xylene | mg/kg | 0.1 | 4.0 | <0.1 | 5 | 79 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 9.3 | 9.3 | 10 | 93 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 9.2 | 9.3 | 10 | 92 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.1 | 8.1 | 10 | 81 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | 12 | <0.3 | - | - |
| | | | Total BTEX | mg/kg | 0.6 | 23 | <0.6 | - | - |

## Volatile Petroleum Hydrocarbons in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE220472.001 | LB226488.004 | | TRH C6-C10 | mg/kg | 25 | 72 | <25 | 92.5 | 77 |
| | | | TRH C6-C9 | mg/kg | 20 | 64 | <20 | 80 | 80 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 9.3 | 9.3 | 10 | 93 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 9.2 | 9.3 | 10 | 92 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.1 | 8.1 | - | 81 |
| | | VPH F | Benzene (F0) | mg/kg | 0.1 | 3.6 | <0.1 | - | - |
| | | Bands | TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | 49 | <25 | 62.5 | 77 |

# MATRIX SPIKE DUPLICATES

SE220482 R0

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

FTe original result is tTe analyte concentration of tTe matrix spike. FTe Duplicate result is tTe analyte concentration of tTe matrix spike duplicate.

FTe RPD is evaluated against tTe Maximum AllowaLle Difference jMAD( criteria and can Le grapTically represented Ly a curve calculated from tTe Statistical Detection himit jSDh( and himiting RepeataLility jhR( using tTe formula: MAD = 100 x SDh / Mean + hR

WTere tTe Maximum AllowaLle Difference evaluates to a numLer larger tTan 200 it is displayed as 200.

RPD is sTown in **Green** wTen witTin suggested criteria or **Red** witT an appended reason identifer wTen outside suggested criteria. Refer to tTe footnotes section at tTe

No matrix spike duplicates were required for tTis toL.

Samples analysed as received.

Solid samples expressed on a dry weigTt Lasis.

QC criteria are suLject to internal review according to tTe SGS QA/QC plan and may Le provided on request or alternatively can Le found Tere: Ttps://www.sgs.com.au/~/media/hocal/Australia/Documents/FecTnical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

| | |
|---|---|
| * | NAFA accreditation does not cover tTe performance of tTis service. |
| ** | Indicative data, tTeoretical Tolding time exceeded. |
| *** | Indicates tTat LotT * and ** apply. |
| - | Sample not analysed for tTis analyte. |
| IS | Insufficient sample for analysis. |
| hNR | Sample listed, Lut not received. |
| hOR | himit of reporting. |
| Q7H | QC result is aLove tTe upper tolerance. |
| Q7h | QC result is Lelow tTe lower tolerance. |
| ① | At least 2 of 3 surrogates are witTin acceptance criteria. |
| ② | RPD failed acceptance criteria due to sample Teterogeneity. |
| ③ | Results less tTan 5 times hOR preclude acceptance criteria for RPD. |
| ④ | Recovery failed acceptance criteria due to matrix interference. |
| ⑤ | Recovery failed acceptance criteria due to tTe presence of significant concentration of analyte ji.e. tTe concentration of analyte exceeds tTe spike level(. |
| ⑥ | hOR was raised due to sample matrix interference. |
| ⑦ | hOR was raised due to dilution of significantly TigT concentration of analyte in sample. |
| ⑧ | Reanalysis of sample in duplicate confirmed sample Teterogeneity and inconsistency of results. |
| ⑨ | Recovery failed acceptance criteria due to sample Teterogeneity. |
| ⑩ | hOR was raised due to TigT conductivity of tTe sample jrequired dilution(. |
| † | Refer to relevant report comments for furtTer information. |

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# ANALYTICAL REPORT

Accreditation No. 2562

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20005-6** |
| Order Number | **JME20005-6** |
| Samples | 1 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE220482 R0** |
| Date Received | 08 Jun 2021 |
| Date Reported | 16 Jun 2021 |

## 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 soil sample supplied has been sub-sampled for asbestos according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. For identification of asbestos in soil samples, Industries & environment recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin .

PFAS subcontracted to SGS Melbourne, Unit 10/585 Blackburn Road Notting Hill VIC 3168, NATA Accreditation Number 2562, Site number 14420. ME320921

MA1523: Surrogate recoveries of some PFAS compounds out of range due to matrix interference .

## SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Huong CRAWFORD
Production Manager

Kamrul AHSAN
Senior Chemist

Ly Kim HA
Organic Section Head

Yusuf KUTHPUDIN
Asbestos Analyst

# ANALYTICAL REPORT

RESULTS

Fibre Identification in soil — Method AN602

| Laboratory Reference | Client Reference | Matrix | Sample Description | Date Sampled | Fibre Identification | Est.%w/w* |
|---|---|---|---|---|---|---|
| SE220482.004 | HA2-2 | Soil | 36g Sand, Soil, Rocks | 03 Jun 2021 | No Asbestos Found at RL of 0.1g/kg | <0.01 |

# METHOD SUMMARY

SE220482 R0

| METHOD | METHODOLOGY SUMMARY |
|---|---|
| AN602 | 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 | Fibres/material that cannot be unequivocably 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 | AS4964.2004 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 | 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-<br><br>(a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres):<br>(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<br>(c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions. |

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.

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# ANALYTICAL REPORT

Accreditation No. 2562

| CLIENT DETAILS | | LABORATORY DETAILS | |
|---|---|---|---|
| Contact | Huong Crawford | Manager | Adam Atkinson |
| Client | SGS I&E SYDNEY | Laboratory | SGS Melbourne EH&S |
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| Facsimile | 02 8594 0499 | Facsimile | +61395743399 |
| Email | au.environmental.sydney@sgs.com | Email | Au.SampleReceipt.Melbourne@sgs.com |
| Project | **JME20005-6** | SGS Reference | **ME320921 R0** |
| Order Number | **SE220482** | Date Received | 09 Jun 2021 |
| Samples | 14 | Date Reported | 16 Jun 2021 |

COMMENTS

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

MA1523: Surrogate recoveries of some PFAS compounds out of range due to matrix interference .

SIGNATORIES

Adam ATKINSON
Australian Chemistry Manager

Vanessa PALAMARA
Senior Chemist

| Parameter | Units | LOR | Sample Number: ME320921.001<br>Sample Matrix: Soil<br>Sample Date: 03 Jun 2021<br>Sample Name: SE220482.001 | ME320921.002<br>Soil<br>03 Jun 2021<br>SE220482.002 | ME320921.003<br>Soil<br>03 Jun 2021<br>SE220482.003 | ME320921.004<br>Soil<br>03 Jun 2021<br>SE220482.004 |
|---|---|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples** | **Method: MA-1523** | **Tested: 10/6/2021** | | | | |
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| Total of PFAS (n=30) | mg/kg | 0.08 | <0.08 | <0.08 | <0.08 | <0.08 |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | **111** | **112** | **110** | **108** |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | **131** | **129** | **132** | **126** |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | **125** | **111** | **112** | **114** |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | **137** | **102** | **117** | **110** |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | **111** | **102** | **106** | **115** |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | **122** | **104** | **97** | **114** |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | **137** | **133** | **129** | **118** |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | **94** | **95** | **105** | **103** |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | **99** | **96** | **97** | **98** |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | **28** | **40** | **33** | **39** |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | **6** | **14** | **10** | **16** |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | **120** | **128** | **122** | **115** |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | **108** | **118** | **124** | **110** |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | **126** | **104** | **102** | **131** |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | **85** | **82** | **79** | **74** |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | **89** | **86** | **82** | **87** |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | **56** | **81** | **72** | **83** |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | **99** | **106** | **82** | **96** |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | **56** | **65** | **55** | **70** |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | **39** | **48** | **49** | **53** |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | **85** | **68** | **63** | **78** |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | **56** | **57** | **55** | **63** |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | **70** | **69** | **81** | **89** |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | **84** | **63** | **56** | **80** |

**Moisture Content** **Method: AN002** **Tested: 10/6/2021**

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME320921.001<br>Soil<br>03 Jun 2021<br>SE220482.001 | ME320921.002<br>Soil<br>03 Jun 2021<br>SE220482.002 | ME320921.003<br>Soil<br>03 Jun 2021<br>SE220482.003 | ME320921.004<br>Soil<br>03 Jun 2021<br>SE220482.004 |
|---|---|---|---|---|---|---|
| **Moisture Content Method: AN002 Tested: 10/6/2021 (continued)** | | | | | | |
| % Moisture* | %w/w | 1 | **16.2** | **7.8** | **16.6** | **3.8** |
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples Method: MA-1523 Tested: 11/6/2021** | | | | | | |
| Perfluorobutanoic acid (PFBA) | µg/L | 0.002 | - | - | - | - |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.002 | - | - | - | - |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.002 | - | - | - | - |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.002 | - | - | - | - |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.002 | - | - | - | - |
| Perfluorononanoic acid (PFNA) | µg/L | 0.004 | - | - | - | - |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.004 | - | - | - | - |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.004 | - | - | - | - |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.004 | - | - | - | - |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.004 | - | - | - | - |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.004 | - | - | - | - |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.008 | - | - | - | - |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.004 | - | - | - | - |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.004 | - | - | - | - |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.002 | - | - | - | - |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.002 | - | - | - | - |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.002 | - | - | - | - |
| Sum of PFHxS and PFOS | µg/L | 0.002 | - | - | - | - |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.002 | - | - | - | - |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.002 | - | - | - | - |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.002 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.002 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.002 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.002 | - | - | - | - |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.008 | - | - | - | - |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.01 | - | - | - | - |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.01 | - | - | - | - |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.01 | - | - | - | - |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.01 | - | - | - | - |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.01 | - | - | - | - |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.01 | - | - | - | - |
| Total of PFAS (n=30) | µg/L | 0.04 | - | - | - | - |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME320921.001<br>Soil<br>03 Jun 2021<br>SE220482.001 | ME320921.002<br>Soil<br>03 Jun 2021<br>SE220482.002 | ME320921.003<br>Soil<br>03 Jun 2021<br>SE220482.003 | ME320921.004<br>Soil<br>03 Jun 2021<br>SE220482.004 |
|---|---|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples Method: MA-1523 Tested: 11/6/2021 (continued)** | | | | | | |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME320921.005<br>Soil<br>03 Jun 2021<br>SE220482.005 | ME320921.006<br>Soil<br>03 Jun 2021<br>SE220482.006 | ME320921.007<br>Soil<br>03 Jun 2021<br>SE220482.007 | ME320921.008<br>Soil<br>03 Jun 2021<br>SE220482.008 |
|---|---|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 10/6/2021** | | | | | | |
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| Total of PFAS (n=30) | mg/kg | 0.08 | <0.08 | <0.08 | <0.08 | <0.08 |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | **111** | **111** | **109** | **111** |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | **133** | **129** | **139** | **129** |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | **116** | **121** | **108** | **118** |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | **114** | **114** | **107** | **117** |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | **103** | **111** | **101** | **106** |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | **115** | **108** | **123** | **107** |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | **123** | **121** | **114** | **128** |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | **113** | **103** | **103** | **118** |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | **111** | **97** | **92** | **109** |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | **39** | **34** | **34** | **48** |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | **11** | **11** | **9** | **20** |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | **128** | **132** | **129** | **126** |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | **124** | **127** | **119** | **101** |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | **125** | **102** | **96** | **104** |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | **95** | **91** | **74** | **79** |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | **120** | **98** | **85** | **81** |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | **94** | **81** | **87** | **65** |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | **91** | **79** | **72** | **94** |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | **48** | **57** | **44** | **75** |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | **36** | **51** | **28** | **50** |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | **60** | **58** | **52** | **76** |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | **58** | **55** | **45** | **68** |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | **76** | **52** | **57** | **82** |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | **73** | **51** | **68** | **80** |

**Moisture Content Method: AN002 Tested: 10/6/2021**

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME320921.005<br>Soil<br>03 Jun 2021<br>SE220482.005 | ME320921.006<br>Soil<br>03 Jun 2021<br>SE220482.006 | ME320921.007<br>Soil<br>03 Jun 2021<br>SE220482.007 | ME320921.008<br>Soil<br>03 Jun 2021<br>SE220482.008 |
|---|---|---|---|---|---|---|
| **Moisture Content Method: AN002 Tested: 10/6/2021 (continued)** | | | | | | |
| % Moisture* | %w/w | 1 | **8.5** | **7.6** | **7.7** | **18.5** |
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples Method: MA-1523 Tested: 11/6/2021** | | | | | | |
| Perfluorobutanoic acid (PFBA) | µg/L | 0.002 | - | - | - | - |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.002 | - | - | - | - |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.002 | - | - | - | - |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.002 | - | - | - | - |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.002 | - | - | - | - |
| Perfluorononanoic acid (PFNA) | µg/L | 0.004 | - | - | - | - |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.004 | - | - | - | - |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.004 | - | - | - | - |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.004 | - | - | - | - |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.004 | - | - | - | - |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.004 | - | - | - | - |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.008 | - | - | - | - |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.004 | - | - | - | - |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.004 | - | - | - | - |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.002 | - | - | - | - |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.002 | - | - | - | - |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.002 | - | - | - | - |
| Sum of PFHxS and PFOS | µg/L | 0.002 | - | - | - | - |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.002 | - | - | - | - |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.002 | - | - | - | - |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.002 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.002 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.002 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.002 | - | - | - | - |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.008 | - | - | - | - |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.01 | - | - | - | - |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.01 | - | - | - | - |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.01 | - | - | - | - |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.01 | - | - | - | - |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.01 | - | - | - | - |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.01 | - | - | - | - |
| Total of PFAS (n=30) | µg/L | 0.04 | - | - | - | - |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME320921.005<br>Soil<br>03 Jun 2021<br>SE220482.005 | ME320921.006<br>Soil<br>03 Jun 2021<br>SE220482.006 | ME320921.007<br>Soil<br>03 Jun 2021<br>SE220482.007 | ME320921.008<br>Soil<br>03 Jun 2021<br>SE220482.008 |
|---|---|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples Method: MA-1523 Tested: 11/6/2021 (continued)** | | | | | | |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME320921.009<br>Soil<br>03 Jun 2021<br>SE220482.009 | ME320921.010<br>Soil<br>03 Jun 2021<br>SE220482.010 | ME320921.011<br>Soil<br>03 Jun 2021<br>SE220482.011 | ME320921.012<br>Soil<br>03 Jun 2021<br>SE220482.012 |
|---|---|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 15/6/2021** | | | | | | |
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | - | - | - | - |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | - | - | - | - |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | - | - | - | - |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | - | - | - | - |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | - | - | - | - |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | - | - | - | - |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | - | - | - | - |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | - | - | - | - |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | - | - | - | - |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | - | - | - | - |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | - | - | - | - |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | - | - | - | - |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | - | - | - | - |
| Total of PFAS (n=30) | mg/kg | 0.08 | - | - | - | - |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |

**Moisture Content Method: AN002 Tested: 11/6/2021**

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME320921.009<br>Soil<br>03 Jun 2021<br>SE220482.009 | ME320921.010<br>Soil<br>03 Jun 2021<br>SE220482.010 | ME320921.011<br>Soil<br>03 Jun 2021<br>SE220482.011 | ME320921.012<br>Soil<br>03 Jun 2021<br>SE220482.012 |
|---|---|---|---|---|---|---|
| **Moisture Content Method: AN002 Tested: 11/6/2021 (continued)** | | | | | | |
| % Moisture* | %w/w | 1 | - | - | - | - |
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples Method: MA-1523 Tested: 11/6/2021** | | | | | | |
| Perfluorobutanoic acid (PFBA) | µg/L | 0.002 | - | - | - | - |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.002 | - | - | - | - |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.002 | - | - | - | - |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.002 | - | - | - | - |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.002 | - | - | - | - |
| Perfluorononanoic acid (PFNA) | µg/L | 0.004 | - | - | - | - |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.004 | - | - | - | - |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.004 | - | - | - | - |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.004 | - | - | - | - |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.004 | - | - | - | - |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.004 | - | - | - | - |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.008 | - | - | - | - |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.004 | - | - | - | - |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.004 | - | - | - | - |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.002 | - | - | - | - |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.002 | - | - | - | - |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.002 | - | - | - | - |
| Sum of PFHxS and PFOS | µg/L | 0.002 | - | - | - | - |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.002 | - | - | - | - |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.002 | - | - | - | - |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.002 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.002 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.002 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.002 | - | - | - | - |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.008 | - | - | - | - |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.01 | - | - | - | - |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.01 | - | - | - | - |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.01 | - | - | - | - |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.01 | - | - | - | - |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.01 | - | - | - | - |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.01 | - | - | - | - |
| Total of PFAS (n=30) | µg/L | 0.04 | - | - | - | - |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME320921.009<br>Soil<br>03 Jun 2021<br>SE220482.009 | ME320921.010<br>Soil<br>03 Jun 2021<br>SE220482.010 | ME320921.011<br>Soil<br>03 Jun 2021<br>SE220482.011 | ME320921.012<br>Soil<br>03 Jun 2021<br>SE220482.012 |
|---|---|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples Method: MA-1523 Tested: 11/6/2021 (continued)** | | | | | | |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME320921.013<br>Water<br>03 Jun 2021<br>SE220482.013 | ME320921.014<br>Water<br>03 Jun 2021<br>SE220482.014 |
|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 15/6/2021** | | | | |
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | - | - |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | - | - |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | - | - |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | - | - |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | - | - |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | - | - |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | - | - |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | - | - |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | - | - |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | - | - |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | - | - |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | - | - |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | - | - |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | - | - |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | - | - |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | - | - |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | - | - |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | - | - |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | - | - |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | - | - |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | - | - |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | - | - |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | - | - |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | - | - |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | - | - |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | - | - |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | - | - |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | - | - |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | - | - |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | - | - |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | - | - |
| Total of PFAS (n=30) | mg/kg | 0.08 | - | - |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | - | - |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | - | - |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - |

**Moisture Content Method: AN002 Tested: 11/6/2021**

| Parameter | Units | LOR | Sample Number ME320921.013<br>Sample Matrix Water<br>Sample Date 03 Jun 2021<br>Sample Name SE220482.013 | Sample Number ME320921.014<br>Sample Matrix Water<br>Sample Date 03 Jun 2021<br>Sample Name SE220482.014 |
|---|---|---|---|---|
| **Moisture Content Method: AN002 Tested: 11/6/2021 (continued)** | | | | |
| % Moisture* | %w/w | 1 | - | - |
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples Method: MA-1523 Tested: 10/6/2021** | | | | |
| Perfluorobutanoic acid (PFBA) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluorononanoic acid (PFNA) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.008 | <0.008 | <0.008 |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.004 | <0.004 | <0.004 |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.002 | <0.002 | **0.003** |
| Sum of PFHxS and PFOS | µg/L | 0.002 | <0.002 | **0.003** |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.002 | <0.002 | <0.002 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.002 | <0.002 | <0.002 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.002 | <0.002 | <0.002 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.008 | <0.008 | <0.008 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.01 | <0.01 | <0.01 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.01 | <0.01 | <0.01 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.01 | <0.01 | <0.01 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.01 | <0.01 | <0.01 |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.01 | <0.01 | <0.01 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.01 | <0.01 | <0.01 |
| Total of PFAS (n=30) | µg/L | 0.04 | <0.04 | <0.04 |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | **100** | **101** |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | **119** | **120** |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | **93** | **94** |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | **100** | **97** |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | **101** | **99** |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | **108** | **114** |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | **120** | **116** |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | **114** | **92** |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | **123** | **101** |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | **102** | **91** |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | **111** | **112** |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | **120** | **111** |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | **99** | **110** |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | **110** | **94** |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | **126** | **115** |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | **141** | **130** |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | **137** | **128** |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | **71** | **59** |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | **59** | **50** |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | **54** | **62** |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | **56** | **51** |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | **51** | **47** |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | **90** | **86** |

| Parameter | Units | LOR | Sample Number ME320921.013<br>Sample Matrix Water<br>Sample Date 03 Jun 2021<br>Sample Name SE220482.013 | Sample Number ME320921.014<br>Sample Matrix Water<br>Sample Date 03 Jun 2021<br>Sample Name SE220482.014 |
|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples Method: MA-1523 Tested: 10/6/2021 (continued)** | | | | |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | **99** | **98** |

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.

**Moisture Content Method: ME-(AU)-[ENV]AN002**

| Parameter | QC Reference | Units | LOR | DUP %RPD |
|---|---|---|---|---|
| % Moisture* | LB042023 | %w/w | 1 | 16% |

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples Method: MA-1523**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | LB042018 | µg/L | 0.002 | <0.002 | 0% | NA |
| Perfluoropentanoic acid (PFPeA) | LB042018 | µg/L | 0.002 | <0.002 | 0 - 27% | NA |
| Perfluorohexanoic acid (PFHxA) | LB042018 | µg/L | 0.002 | <0.002 | 0% | NA |
| Perfluoroheptanoic acid (PFHpA) | LB042018 | µg/L | 0.002 | <0.002 | 0% | 71% |
| Perfluorooctanoic Acid (PFOA) | LB042018 | µg/L | 0.002 | <0.002 | 0% | 46% |
| Perfluorononanoic acid (PFNA) | LB042018 | µg/L | 0.004 | <0.004 | 0% | 133% |
| Perfluorodecanoic acid (PFDA) | LB042018 | µg/L | 0.004 | <0.004 | 0% | 86% |
| Perfluoroundecanoic acid (PFUnA) | LB042018 | µg/L | 0.004 | <0.004 | 0% | 77% |
| Perfluorododecanoic acid (PFDoA) | LB042018 | µg/L | 0.004 | <0.004 | 0% | 98% |
| Perfluorotridecanoic acid (PFTrDA) | LB042018 | µg/L | 0.004 | <0.004 | 0% | 98% |
| Perfluorotetradecanoic acid (PFTeDA) | LB042018 | µg/L | 0.004 | <0.004 | 0% | 83% |
| Perfluorohexadecanoic acid (PFHxDA) | LB042018 | µg/L | 0.008 | <0.008 | 0% | NA |
| Perfluorobutane sulfonate (PFBS) | LB042018 | µg/L | 0.004 | <0.004 | 0% | NA |
| Perfluoropentane sulfonate (PFPeS) | LB042018 | µg/L | 0.004 | <0.004 | 0% | NA |
| Perfluorohexane sulfonate (PFHxS) | LB042018 | µg/L | 0.002 | <0.002 | 3 - 15% | NA |
| Perfluoroheptane sulfonate (PFHpS) | LB042018 | µg/L | 0.002 | <0.002 | 0% | NA |
| Perfluorooctane sulfonate (PFOS) | LB042018 | µg/L | 0.002 | <0.002 | 0 - 6% | 53% |
| Sum of PFHxS and PFOS | LB042018 | µg/L | 0.002 | <0.002 | 2 - 3% | NA |
| Perfluorononane sulfonate (PFNS) | LB042018 | µg/L | 0.002 | <0.002 | 0% | NA |
| Perfluorodecane sulfonate (PFDS) | LB042018 | µg/L | 0.002 | <0.002 | 0% | NA |
| Perfluorododecane sulfonate (PFDoS) | LB042018 | µg/L | 0.002 | <0.002 | 0% | NA |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | LB042018 | µg/L | 0.002 | <0.002 | 0% | NA |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | LB042018 | µg/L | 0.002 | <0.002 | 0% | NA |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | LB042018 | µg/L | 0.002 | <0.002 | 0% | NA |
| Perfluorooctane sulfonamide (PFOSA) | LB042018 | µg/L | 0.008 | <0.008 | 0% | 52% |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | LB042018 | µg/L | 0.01 | <0.01 | 0% | NA |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | LB042018 | µg/L | 0.01 | <0.01 | 0% | NA |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol (N-MeFOSE) | LB042018 | µg/L | 0.01 | <0.01 | 0% | NA |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol (N-EtFOSE) | LB042018 | µg/L | 0.01 | <0.01 | 0% | NA |
| N-Methylperfluorooctanesulfonamidoacetic acid (N_MeFOSAA) | LB042018 | µg/L | 0.01 | <0.01 | 0% | NA |
| N-Ethylperfluorooctanesulfonamidoacetic Acid (N-EtFOSAA) | LB042018 | µg/L | 0.01 | <0.01 | 0% | NA |
| Total of PFAS (n=30) | LB042018 | µg/L | 0.04 | <0.04 | 0% | NA |
| (13C4-PFBA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 99% | 2 - 4% | 98% |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 81% | 1 - 4% | 119% |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 112% | 4 - 6% | 135% |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 113% | 3 - 8% | 111% |
| (13C4_PFOA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 106% | 5 - 10% | 94% |
| (13C9-PFNA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 103% | 0 - 21% | 98% |
| (13C6-PFDA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 111% | 3 - 19% | 118% |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 85% | 7 - 12% | 94% |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 82% | 15 - 23% | 82% |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 79% | 16 - 24% | 65% |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 99% | 8 - 18% | 42% |
| (13C3-PFBS) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 143% | 6 - 21% | 116% |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 98% | 8 - 15% | 105% |
| (13C8-PFOS) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 90% | 1 - 3% | 108% |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 132% | 2 - 16% | 127% |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 122% | 0 - 25% | 102% |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 113% | 11 - 19% | 133% |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 49% | 10 - 32% | 93% |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 59% | 4 - 16% | 80% |

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.

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples Method: MA-1523 (continued)**

| | | | | MB | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|---|
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 77% | 4 - 7% | 71% |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 84% | 9 - 27% | 80% |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 80% | 11 - 12% | 72% |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 80% | 2 - 4% | 126% |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard | LB042018 | % | - | 84% | 2 - 9% | 82% |

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.

**Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluoropentanoic acid (PFPeA) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorohexanoic acid (PFHxA) | LB042019 | mg/kg | 0.0016 | <0.0016 | 3% | NA |
| Perfluoroheptanoic acid (PFHpA) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | 92% |
| Perfluorooctanoic Acid (PFOA) | LB042019 | mg/kg | 0.0008 | <0.0008 | 3% | 53% |
| Perfluorononanoic acid (PFNA) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | 122% |
| Perfluorodecanoic acid (PFDA) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | 108% |
| Perfluoroundecanoic acid (PFUnA) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | 131% |
| Perfluorododecanoic acid (PFDoA) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | 148% |
| Perfluorotridecanoic acid (PFTrDA) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | 114% |
| Perfluorotetradecanoic acid (PFTeDA) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorohexadecanoic acid (PFHxDA) | LB042019 | mg/kg | 0.0032 | <0.0032 | 0% | NA |
| Perfluorobutane sulfonate (PFBS) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluoropentane sulfonate (PFPeS) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorohexane sulfonate (PFHxS) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluoroheptane sulfonate (PFHpS) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorooctane sulfonate (PFOS) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | 105% |
| Sum PFOS and PFHXS | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorononane sulfonate (PFNS) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorodecane sulfonate (PFDS) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorododecane sulfonate (PFDoS) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | LB042019 | mg/kg | 0.0016 | <0.0016 | 3% | NA |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | LB042019 | mg/kg | 0.0016 | <0.0016 | 18% | NA |
| Perfluorooctane sulfonamide (PFOSA) | LB042019 | mg/kg | 0.0016 | <0.0016 | 0% | 65% |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | LB042019 | mg/kg | 0.008 | <0.008 | 0% | NA |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | LB042019 | mg/kg | 0.008 | <0.008 | 0% | NA |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol (N-MeFOSE) | LB042019 | mg/kg | 0.016 | <0.016 | 0% | NA |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol (N-EtFOSE) | LB042019 | mg/kg | 0.016 | <0.016 | 0% | NA |
| N-Methylperfluorooctanesulfonamidoacetic acid (N_MeFOSAA) | LB042019 | mg/kg | 0.008 | <0.008 | 0% | NA |
| N-Ethylperfluorooctanesulfonamidoacetic Acid (N-EtFOSAA) | LB042019 | mg/kg | 0.008 | <0.008 | 0% | NA |
| Total of PFAS (n=30) | LB042019 | mg/kg | 0.08 | <0.08 | 0% | NA |
| (13C4-PFBA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 109% | 4 - 21% | 110% |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 146% | 1 - 20% | 127% |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 123% | 11 - 17% | 150% |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 117% | 4 - 18% | 132% |
| (13C4_PFOA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 114% | 2 - 11% | 114% |
| (13C9-PFNA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 120% | 5 - 9% | 128% |
| (13C6-PFDA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 146% | 0% | 134% |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 81% | 14 - 19% | 93% |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 73% | 4 - 10% | 74% |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 45% | 23 - 24% | 37% |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 18% | 20 - 22% | 13% |
| (13C3-PFBS) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 135% | 14 - 18% | 124% |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 110% | 5 - 11% | 96% |
| (13C8-PFOS) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 100% | 5 - 26% | 99% |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 113% | 20 - 36% | 140% |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 93% | 17 - 23% | 123% |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 70% | 11 - 13% | 95% |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 67% | 17 - 54% | 124% |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 58% | 0 - 79% | 70% |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 42% | 19 - 71% | 57% |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 46% | 25 - 78% | 116% |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 45% | 2 - 75% | 83% |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 91% | 7 - 21% | 120% |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard | LB042019 | % | - | 82% | 18 - 28% | 82% |

| 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-1523 | This method covers the analysis of per- and polyfluoroalkyl substances ( PFAS) in aqueous, solid and biosolid samples and solvent extracts, determined as the total of linear and branched isomers. After spiking with isotopically labelled quantification surrogates and clean-up via SPE cartridges sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification. |

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 |
| | | QFL | QC result is below the lower tolerance |
| ** | Indicative data, theoretical holding time exceeded. | - | The sample was not analysed for this analyte |
| *** | Indicates that both * and ** apply. | 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 calcuated 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.

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# CHAIN OF CUSTODY & ANALYSIS REQUEST

SGS Environmental Services Sydney
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Facsimile No: (02) 85940499
Telephone No: (02) 85940400
Email:
au.samplereceipt.sydney@sgs.com

| | | | |
|---|---|---|---|
| Company Name: | JM Environments | Project Name/No: | JME20005-6 |
| Address: | 37 Tooke St | Purchase Order No: | JME20005-6 |
| | COOKS HILL NSW 2300 | Results Required By: | Standard |
| Contact Name: | James McMahon | Email: | james@jmenvironments.com |
| Telephone | 0427 893 668 | Email: | |

Sample Date: 11/06/2021

| | | | |
|---|---|---|---|
| Relinquished by: J McMahon | Date /Time: 15/6/2021 4pm | Received by: | Date /Time: 16.6.21 11:35 |
| Relinquished by: | Date /Time: | Received by: | Date /Time: |
| Samples intact: (Yes)/No | Temperature: 5.0°C | Sample Cooler Sealed: Yes/No | Laboratory Quotation: ENVI126319 |

| Lab Sample ID | Sample ID | Water | Soil | Other | Preservative | No. of Containers | | pH/CEC | BTEX/TPH/ PAH/ 8HM | 8HM | OCP/PCB | Asbestos | PFAS | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | HA1-3 | | x | | | 2 | | | X | | | | X | | | | | | |
| 2 | HA2-3 | | x | | | 2 | | | X | | x | | X | | | | | | |
| 3 | HA3-1 | | x | | | 1 | | | | | | | X | | | | | | |
| 4 | HA3-2 | | x | | | 1 | | | | | | | X | | | | | | |
| 5 | HA4-0 | | x | | | 1 | | | | | | | X | | | | | | |
| 6 | HA4-1 | | x | | | 1 | | | | | | | X | | | | | | |
| 7 | HA4-2 | | x | | | 1 | | | | | | | X | | | | | | |
| 8 | MW4 | X | | | | 4 | | | | x | | | X | | | | | | Low level PFAS |
| 9 | MW5 | X | | | | 4 | | | | x | | | X | | | | | | Low level PFAS |
| 10 | MW6 | X | | | | 4 | | | | x | | | X | | | | | | Low level PFAS |
| 11 | MW7 | X | | | | 4 | | | | x | | | X | | | | | | Low level PFAS |
| 12 | MW8 | X | | | | 3 | | | | x | | | X | | | | | | Low level PFAS |
| 13 | MW9 | X | | | | 4 | | | | x | | | X | | | | | | Low level PFAS |
| 14 | MW10 | X | | | | 4 | | | | x | | | X | | | | | | Low level PFAS |
| 15 | QC1 | | X | | | | | | x | | | | X | | | | | | |
| 16 | QC2 | x | | | | | | | | | | | X | | | | | | Low level PFAS |
| 17 | QCC | X | | | | | | | | | | | X | | | | | | Low level PFAS |
| 18 | QCD | X | | | | | | | | | | | X | | | | | | Low level PFAS |

SGS EHS Sydney COC
SE220737

# SAMPLE RECEIPT ADVICE

SE220737

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0827 493 664 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20005-6** |
| Order Number | **JME20005-6** |
| Samples | 14 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 4598 0800 |
| Facsimile | +61 2 4598 0899 |
| Email | au.environmental.sydney@sgs.com |
| Samples Received | Wed 16/6/2021 |
| Report Due | Wed 23/6/2021 |
| SGS Reference | **SE220737** |

## SUBMISSION DETAILS

This is to confirm that 14 samples were received on Wednesday 16/6/2021. Results are expected to be ready by COB Wednesday 23/6/2021.
Please quote SGS reference SE220737 when making enquiries. Refer below for details relating to sample integrity upon receipt.

| | | | |
|---|---|---|---|
| Samples clearly labelled | Yes | Complete documentation received | Yes |
| Sample container provider | SGS | Sample cooling method | Ice |
| Samples received in correct containers | Yes | Sample counts by matrix | 4 Soil, 10 Water |
| Date documentation received | 16/6/2021 | Type of documentation received | COC |
| Samples received in good order | Yes | Samples received without headspace | Yes |
| Sample temperature upon receipt | 5°C | Sufficient sample for analysis | Yes |
| Turnaround time requested | Standard | | |

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

## COMMENTS

PFAS subcontracted to SGS Melbourne, 10/545 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/18820.

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# SAMPLE RECEIPT ADVICE

SE220737

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME20005-6

SUMMARY OF ANALYSIS

| No. | Sample ID | OC Pesticides in Soil | PAH (Polynuclear Aromatic Hydrocarbons) in Soil | PCBs in Soil | Total Recoverable Elements in Soil/Waste | TRH (Total Recoverable Hydrocarbons) in Soil | VOC's in Soil | Volatile Petroleum Hydrocarbons in Soil |
|---|---|---|---|---|---|---|---|---|
| 001 | HA1-3 | - | 26 | - | 7 | 10 | 11 | 7 |
| 002 | HA2-3 | 29 | 26 | 11 | 7 | 10 | 11 | 7 |
| 015 | QC1 | - | 26 | - | 7 | 10 | 11 | 7 |

CONTINUED OVERLEAF

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

# SAMPLE RECEIPT ADVICE

SE220737

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME20005-6

SUMMARY OF ANALYSIS

| No. | Sample ID | Mercury (dissolved) in Water | Mercury in Soil | Moisture Content | Per- and Polyfluoroalkyl Substances (PFAS) in | Trace Metals (Dissolved) in Water by ICPMS |
|---|---|---|---|---|---|---|
| 001 | HA1-3 | - | 1 | 1 | 56 | - |
| 002 | HA2-3 | - | 1 | 1 | 56 | - |
| 003 | HA3-1 | - | - | - | 56 | - |
| 008 | HA3-2 | - | - | - | 56 | - |
| 005 | HA8-0 | - | - | - | 56 | - |
| 006 | HA8-1 | - | - | - | 56 | - |
| 007 | HA8-2 | - | - | - | 56 | - |
| 004 | MW8 | 1 | - | - | - | 7 |
| 009 | MW5 | 1 | - | - | - | 7 |
| 010 | MW6 | 1 | - | - | - | 7 |
| 011 | MW7 | 1 | - | - | - | 7 |
| 012 | MW4 | 1 | - | - | - | 7 |
| 013 | MW9 | 1 | - | - | - | 7 |
| 018 | MW10 | 1 | - | - | - | 7 |
| 015 | QC1 | - | 1 | 1 | 56 | - |

CONTINUED OVERLEAF

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

# SAMPLE RECEIPT ADVICE

SE220737

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME20005-6

SUMMARY OF ANALYSIS

| No. | Sample ID | Per- and Polyfluoroalkyl Substances (PFAS) in |
|---|---|---|
| 004 | MW8 | 56 |
| 009 | MW5 | 56 |
| 010 | MW6 | 56 |
| 011 | MW7 | 56 |
| 012 | MW4 | 56 |
| 013 | MW9 | 56 |
| 018 | MW10 | 56 |
| 016 | QC2 | 56 |
| 017 | QCC | 56 |
| 014 | QCD | 56 |

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

# ANALYTICAL REPORT

Accreditation No. 2562

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20005-6** |
| Order Number | **JME20005-6** |
| Samples | 18 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE220737 R0** |
| Date Received | 16/6/2021 |
| Date Reported | 23/6/2021 |

## COMMENTS

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

PFAS subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420.

MA1523: Some surrogate recovery is outside of the acceptance criteria due to sample matrix interference.
MA1523: LCS recoveries were good for all compounds except PFTrDA.

## SIGNATORIES

**Akheeqar BENIAMEEN**
Chemist

**Dong LIANG**
Metals/Inorganics Team Leader

**Kamrul AHSAN**
Senior Chemist

**Ly Kim HA**
Organic Section Head

**Shane MCDERMOTT**
Inorganic/Metals Chemist

**Teresa NGUYEN**
Organic Chemist

## VOC's in Soil [AN433] Tested: 17/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Total Xylenes | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | <0.6 |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |

## Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 17/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 |
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C10 | mg/kg | 25 | <25 | <25 | <25 |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | <25 | <25 | <25 |

## TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 17/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 |
| TRH >C10-C16 | mg/kg | 25 | <25 | <25 | <25 |
| TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 |
| TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | <210 | <210 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 17/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| 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 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | **0.1** | **0.2** |
| Pyrene | mg/kg | 0.1 | <0.1 | **0.1** | **0.2** |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | **0.1** |
| Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(ghi)perylene | mg/kg | 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 |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 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 |
| Total PAH (18) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 |

## OC Pesticides in Soil [AN420] Tested: 17/6/2021

| PARAMETER | UOM | LOR | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 |
|---|---|---|---|
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 |
| Alpha BHC | mg/kg | 0.1 | <0.1 |
| Lindane | mg/kg | 0.1 | <0.1 |
| Heptachlor | mg/kg | 0.1 | <0.1 |
| Aldrin | mg/kg | 0.1 | <0.1 |
| Beta BHC | mg/kg | 0.1 | <0.1 |
| Delta BHC | mg/kg | 0.1 | <0.1 |
| Heptachlor epoxide | mg/kg | 0.1 | <0.1 |
| o,p'-DDE | mg/kg | 0.1 | <0.1 |
| Alpha Endosulfan | mg/kg | 0.2 | <0.2 |
| Gamma Chlordane | mg/kg | 0.1 | <0.1 |
| Alpha Chlordane | mg/kg | 0.1 | <0.1 |
| trans-Nonachlor | mg/kg | 0.1 | <0.1 |
| p,p'-DDE | mg/kg | 0.1 | <0.1 |
| Dieldrin | mg/kg | 0.2 | <0.2 |
| Endrin | mg/kg | 0.2 | <0.2 |
| o,p'-DDD | mg/kg | 0.1 | <0.1 |
| o,p'-DDT | mg/kg | 0.1 | <0.1 |
| Beta Endosulfan | mg/kg | 0.2 | <0.2 |
| p,p'-DDD | mg/kg | 0.1 | <0.1 |
| p,p'-DDT | mg/kg | 0.1 | <0.1 |
| Endosulfan sulphate | mg/kg | 0.1 | <0.1 |
| Endrin Aldehyde | mg/kg | 0.1 | <0.1 |
| Methoxychlor | mg/kg | 0.1 | <0.1 |
| Endrin Ketone | mg/kg | 0.1 | <0.1 |
| Isodrin | mg/kg | 0.1 | <0.1 |
| Mirex | mg/kg | 0.1 | <0.1 |
| Total CLP OC Pesticides | mg/kg | 1 | <1 |

## PCBs in Soil [AN420] Tested: 17/6/2021

| PARAMETER | UOM | LOR | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 |
|---|---|---|---|
| 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 | <1 |

## Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 21/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | **2** | <1 | <1 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | **8.0** | **2.9** | **3.1** |
| Copper, Cu | mg/kg | 0.5 | **7.6** | **2.4** | **2.5** |
| Lead, Pb | mg/kg | 1 | **8** | **4** | **3** |
| Nickel, Ni | mg/kg | 0.5 | **3.0** | **1.3** | **1.3** |
| Zinc, Zn | mg/kg | 2 | **150** | **100** | **95** |

## Mercury in Soil [AN312] Tested: 21/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 |

## Moisture Content [AN002] Tested: 21/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | **7.3** | **5.1** | **6.9** |

## Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [MA-1523] Tested: 23/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | HA3-1<br>SOIL<br>-<br>11/6/2021<br>SE220737.003 | HA3-2<br>SOIL<br>-<br>11/6/2021<br>SE220737.004 | HA4-0<br>SOIL<br>-<br>11/6/2021<br>SE220737.005 |
|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| Total of PFAS (n=30) | mg/kg | 0.08 | <0.08 | <0.08 | <0.08 | <0.08 | <0.08 |

## Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [MA-1523] Tested: 23/6/2021 (continued)

| PARAMETER | UOM | LOR | HA4-1<br>SOIL<br>-<br>11/6/2021<br>SE220737.006 | HA4-2<br>SOIL<br>-<br>11/6/2021<br>SE220737.007 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | <0.0032 | <0.0032 | <0.0032 |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 |
| Total of PFAS (n=30) | mg/kg | 0.08 | <0.08 | <0.08 | <0.08 |

## Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 18/6/2021

| PARAMETER | UOM | LOR | MW4 WATER - 11/6/2021 SE220737.008 | MW5 WATER - 11/6/2021 SE220737.009 | MW6 WATER - 11/6/2021 SE220737.010 | MW7 WATER - 11/6/2021 SE220737.011 | MW8 WATER - 11/6/2021 SE220737.012 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | µg/L | 1 | 1 | <1 | <1 | <1 | <1 |
| Cadmium, Cd | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Copper, Cu | µg/L | 1 | 1 | <1 | 1 | <1 | 1 |
| Chromium, Cr | µg/L | 1 | 2 | 3 | 8 | 3 | 2 |
| Nickel, Ni | µg/L | 1 | <1 | <1 | <1 | <1 | <1 |
| Lead, Pb | µg/L | 1 | <1 | <1 | <1 | <1 | <1 |
| Zinc, Zn | µg/L | 5 | 12 | 17 | <5 | 5 | <5 |

| PARAMETER | UOM | LOR | MW9 WATER - 11/6/2021 SE220737.013 | MW10 WATER - 11/6/2021 SE220737.014 |
|---|---|---|---|---|
| Arsenic, As | µg/L | 1 | <1 | <1 |
| Cadmium, Cd | µg/L | 0.1 | <0.1 | <0.1 |
| Copper, Cu | µg/L | 1 | <1 | <1 |
| Chromium, Cr | µg/L | 1 | 3 | 3 |
| Nickel, Ni | µg/L | 1 | <1 | <1 |
| Lead, Pb | µg/L | 1 | <1 | <1 |
| Zinc, Zn | µg/L | 5 | <5 | 220 |

## Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 17/6/2021

| PARAMETER | UOM | LOR | MW4 WATER - 11/6/2021 SE220737.008 | MW5 WATER - 11/6/2021 SE220737.009 | MW6 WATER - 11/6/2021 SE220737.010 | MW7 WATER - 11/6/2021 SE220737.011 | MW8 WATER - 11/6/2021 SE220737.012 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/L | 0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |

| PARAMETER | UOM | LOR | MW9 WATER - 11/6/2021 SE220737.013 | MW10 WATER - 11/6/2021 SE220737.014 |
|---|---|---|---|---|
| Mercury | mg/L | 0.0001 | <0.0001 | <0.0001 |

## Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level [MA-1523] Tested: 23/6/2021

| PARAMETER | UOM | LOR | MW4 WATER - 11/6/2021 SE220737.008 | MW5 WATER - 11/6/2021 SE220737.009 | MW6 WATER - 11/6/2021 SE220737.010 | MW7 WATER - 11/6/2021 SE220737.011 | MW8 WATER - 11/6/2021 SE220737.012 |
|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | µg/L | 0.0005 | **0.035** | **0.0066** | <0.0005 | **0.0014** | **0.0005** |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.0005 | **0.014** | **0.0030** | <0.0005 | **0.0025** | <0.0005 |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.0005 | **0.016** | **0.0065** | **0.0005** | **0.0022** | **0.0007** |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.0005 | **0.0081** | **0.0044** | **0.0006** | **0.0011** | **0.0005** |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.0005 | **0.016** | **0.012** | <0.0005 | **0.0018** | **0.010** |
| Perfluorononanoic acid (PFNA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.001 | **0.002** | **0.001** | <0.001 | **0.003** | **0.001** |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.001 | **0.002** | <0.001 | <0.001 | **0.001** | <0.001 |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.0002 | **0.068** | **0.027** | <0.0002 | **0.021** | **0.026** |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.0002 | **0.0003** | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.0002 | **0.016** | **0.0071** | <0.0002 | **0.0081** | **0.011** |
| Sum of PFHxS and PFOS | µg/L | 0.0002 | **0.084** | **0.034** | <0.0002 | **0.029** | **0.037** |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| Total PFAS (n=30) | µg/L | 0.006 | **0.18** | **0.067** | <0.0060 | **0.042** | **0.050** |

## Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level [MA-1523] Tested: 23/6/2021

| PARAMETER | UOM | LOR | MW9 WATER - 11/6/2021 SE220737.013 | MW10 WATER - 11/6/2021 SE220737.014 | QC2 WATER - 11/6/2021 SE220737.016 | QCC WATER - 11/6/2021 SE220737.017 | QCD WATER - 11/6/2021 SE220737.018 |
|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | µg/L | 0.0005 | **0.0006** | **0.0097** | **0.033** | **0.0011** | **0.0013** |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.0005 | <0.0005 | **0.0026** | **0.013** | **0.0016** | **0.0016** |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.0005 | <0.0005 | **0.0054** | **0.014** | **0.0010** | **0.0010** |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.0005 | <0.0005 | **0.0018** | **0.0086** | **0.0006** | <0.0005 |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.0005 | <0.0005 | **0.018** | **0.017** | **0.0005** | **0.0012** |
| Perfluorononanoic acid (PFNA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.001 | <0.001 | **0.001** | **0.002** | <0.001 | <0.001 |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.001 | <0.001 | **0.001** | **0.002** | <0.001 | <0.001 |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.0002 | **0.0005** | **0.034** | **0.058** | **0.0017** | **0.0014** |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.0002 | <0.0002 | **0.0008** | **0.0003** | <0.0002 | <0.0002 |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.0002 | **0.0007** | **0.026** | **0.020** | **0.0017** | **0.0018** |
| Sum of PFHxS and PFOS | µg/L | 0.0002 | **0.0012** | **0.061** | **0.079** | **0.0034** | **0.0033** |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| Total PFAS (n=30) | µg/L | 0.006 | <0.0060 | **0.10** | **0.17** | **0.0082** | **0.0083** |

| 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 ASS 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). |
| 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. |
| MA-1523 | This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts, determined as the total of linear and branched isomers. After spiking with isotopically labelled quantification surrogates and clean-up via SPE cartridges sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification. |

FOOTNOTES

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

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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

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# STATEMENT OF QA/QC PERFORMANCE

**SE220737 R0**

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20005-6** |
| Order Number | **JME20005-6** |
| Samples | 18 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE220737 R0** |
| Date Received | 16 Jun 2021 |
| Date Reported | 23 Jun 2021 |

## 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 | 13 items |
| | Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES | 5 items |
| | TRH (Total Recoverable Hydrocarbons) in Soil | 5 items |

## SAMPLE SUMMARY

# HOLDING TIME SUMMARY

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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

## 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 |
|---|---|---|---|---|---|---|---|---|
| MW4 | SE220737.008 | LB226913 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 17 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 |
| MW5 | SE220737.009 | LB226913 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 17 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 |
| MW6 | SE220737.010 | LB226913 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 17 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 |
| MW7 | SE220737.011 | LB226913 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 17 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 |
| MW8 | SE220737.012 | LB226913 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 17 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 |
| MW9 | SE220737.013 | LB226913 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 17 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 |
| MW10 | SE220737.014 | LB226913 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 17 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 |

## Mercury in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB227223 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 | 09 Jul 2021 | 23 Jun 2021 |
| HA2-3 | SE220737.002 | LB227223 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 | 09 Jul 2021 | 23 Jun 2021 |
| QC1 | SE220737.015 | LB227223 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 | 09 Jul 2021 | 23 Jun 2021 |

## Moisture Content

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB227109 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 21 Jun 2021 | 26 Jun 2021 | 22 Jun 2021 |
| HA2-3 | SE220737.002 | LB227109 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 21 Jun 2021 | 26 Jun 2021 | 22 Jun 2021 |
| QC1 | SE220737.015 | LB227109 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 21 Jun 2021 | 26 Jun 2021 | 22 Jun 2021 |

## OC Pesticides in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| HA2-3 | SE220737.002 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| QC1 | SE220737.015 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| HA2-3 | SE220737.002 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| QC1 | SE220737.015 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |

## PCBs in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| HA2-3 | SE220737.002 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| QC1 | SE220737.015 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |

## 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 |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB227222 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 | 08 Dec 2021 | 23 Jun 2021 |
| HA2-3 | SE220737.002 | LB227222 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 | 08 Dec 2021 | 23 Jun 2021 |
| QC1 | SE220737.015 | LB227222 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 | 08 Dec 2021 | 23 Jun 2021 |

## 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 |
|---|---|---|---|---|---|---|---|---|
| MW4 | SE220737.008 | LB227006 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 18 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 |
| MW5 | SE220737.009 | LB227006 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 18 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 |
| MW6 | SE220737.010 | LB227006 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 18 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 |
| MW7 | SE220737.011 | LB227006 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 18 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 |
| MW8 | SE220737.012 | LB227006 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 18 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 |
| MW9 | SE220737.013 | LB227006 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 18 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 |
| MW10 | SE220737.014 | LB227006 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 18 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 |

## TRH (Total Recoverable Hydrocarbons) in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| HA2-3 | SE220737.002 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| QC1 | SE220737.015 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |

## VOC's in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB226974 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| HA2-3 | SE220737.002 | LB226974 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |

# HOLDING TIME SUMMARY

SE220737 R0

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

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

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

**VOC's in Soil (continued)** — Method: ME-(AU)-[ENV]AN433

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| QC1 | SE220737.015 | LB226974 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB226974 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| HA2-3 | SE220737.002 | LB226974 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| QC1 | SE220737.015 | LB226974 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |

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

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

### OC Pesticides in Soil

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Tetrachloro-m-xylene (TCMX) (Surrogate) | HA2-3 | SE220737.002 | % | 60 - 130% | 101 |

### PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| 2-fluorobiphenyl (Surrogate) | HA1-3 | SE220737.001 | % | 70 - 130% | 90 |
| | HA2-3 | SE220737.002 | % | 70 - 130% | 90 |
| | QC1 | SE220737.015 | % | 70 - 130% | 96 |
| d14-p-terphenyl (Surrogate) | HA1-3 | SE220737.001 | % | 70 - 130% | 94 |
| | HA2-3 | SE220737.002 | % | 70 - 130% | 94 |
| | QC1 | SE220737.015 | % | 70 - 130% | 94 |
| d5-nitrobenzene (Surrogate) | HA1-3 | SE220737.001 | % | 70 - 130% | 98 |
| | HA2-3 | SE220737.002 | % | 70 - 130% | 96 |
| | QC1 | SE220737.015 | % | 70 - 130% | 100 |

### PCBs in Soil

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Tetrachloro-m-xylene (TCMX) (Surrogate) | HA2-3 | SE220737.002 | % | 60 - 130% | 101 |

### Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level

Method: MA-1523

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 91 |
| | MW5 | SE220737.009 | % | 10 - 150% | 65 |
| | MW6 | SE220737.010 | % | 10 - 150% | 89 |
| | MW7 | SE220737.011 | % | 10 - 150% | 91 |
| | MW8 | SE220737.012 | % | 10 - 150% | 93 |
| | MW9 | SE220737.013 | % | 10 - 150% | 108 |
| | MW10 | SE220737.014 | % | 10 - 150% | 77 |
| | QC2 | SE220737.016 | % | 10 - 150% | 101 |
| | QCC | SE220737.017 | % | 10 - 150% | 91 |
| | QCD | SE220737.018 | % | 10 - 150% | 86 |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 42 |
| | MW5 | SE220737.009 | % | 10 - 150% | 44 |
| | MW6 | SE220737.010 | % | 10 - 150% | 44 |
| | MW7 | SE220737.011 | % | 10 - 150% | 54 |
| | MW8 | SE220737.012 | % | 10 - 150% | 56 |
| | MW9 | SE220737.013 | % | 10 - 150% | 42 |
| | MW10 | SE220737.014 | % | 10 - 150% | 50 |
| | QC2 | SE220737.016 | % | 10 - 150% | 40 |
| | QCC | SE220737.017 | % | 10 - 150% | 45 |
| | QCD | SE220737.018 | % | 10 - 150% | 49 |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 99 |
| | MW5 | SE220737.009 | % | 10 - 150% | 91 |
| | MW6 | SE220737.010 | % | 10 - 150% | 84 |
| | MW7 | SE220737.011 | % | 10 - 150% | 120 |
| | MW8 | SE220737.012 | % | 10 - 150% | 118 |
| | MW9 | SE220737.013 | % | 10 - 150% | 83 |
| | MW10 | SE220737.014 | % | 10 - 150% | 109 |
| | QC2 | SE220737.016 | % | 10 - 150% | 98 |
| | QCC | SE220737.017 | % | 10 - 150% | 92 |
| | QCD | SE220737.018 | % | 10 - 150% | 95 |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 81 |
| | MW5 | SE220737.009 | % | 10 - 150% | 84 |
| | MW6 | SE220737.010 | % | 10 - 150% | 77 |
| | MW7 | SE220737.011 | % | 10 - 150% | 89 |
| | MW8 | SE220737.012 | % | 10 - 150% | 86 |
| | MW9 | SE220737.013 | % | 10 - 150% | 70 |
| | MW10 | SE220737.014 | % | 10 - 150% | 113 |
| | QC2 | SE220737.016 | % | 10 - 150% | 89 |
| | QCC | SE220737.017 | % | 10 - 150% | 80 |
| | QCD | SE220737.018 | % | 10 - 150% | 84 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level (continued)** **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C2-PFDoA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 95 |
| | MW5 | SE220737.009 | % | 10 - 150% | 81 |
| | MW6 | SE220737.010 | % | 10 - 150% | 86 |
| | MW7 | SE220737.011 | % | 10 - 150% | 90 |
| | MW8 | SE220737.012 | % | 10 - 150% | 98 |
| | MW9 | SE220737.013 | % | 10 - 150% | 101 |
| | MW10 | SE220737.014 | % | 10 - 150% | 77 |
| | QC2 | SE220737.016 | % | 10 - 150% | 87 |
| | QCC | SE220737.017 | % | 10 - 150% | 90 |
| | QCD | SE220737.018 | % | 10 - 150% | 80 |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 125 |
| | MW5 | SE220737.009 | % | 10 - 150% | 88 |
| | MW6 | SE220737.010 | % | 10 - 150% | 110 |
| | MW7 | SE220737.011 | % | 10 - 150% | 125 |
| | MW8 | SE220737.012 | % | 10 - 150% | 121 |
| | MW9 | SE220737.013 | % | 10 - 150% | 115 |
| | MW10 | SE220737.014 | % | 10 - 150% | 120 |
| | QC2 | SE220737.016 | % | 10 - 150% | 148 |
| | QCC | SE220737.017 | % | 10 - 150% | 116 |
| | QCD | SE220737.018 | % | 10 - 150% | 111 |
| (13C3-PFBS) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 48 |
| | MW5 | SE220737.009 | % | 10 - 150% | 57 |
| | MW6 | SE220737.010 | % | 10 - 150% | 51 |
| | MW7 | SE220737.011 | % | 10 - 150% | 54 |
| | MW8 | SE220737.012 | % | 10 - 150% | 52 |
| | MW9 | SE220737.013 | % | 10 - 150% | 47 |
| | MW10 | SE220737.014 | % | 10 - 150% | 49 |
| | QC2 | SE220737.016 | % | 10 - 150% | 44 |
| | QCC | SE220737.017 | % | 10 - 150% | 51 |
| | QCD | SE220737.018 | % | 10 - 150% | 58 |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 96 |
| | MW5 | SE220737.009 | % | 10 - 150% | 90 |
| | MW6 | SE220737.010 | % | 10 - 150% | 98 |
| | MW7 | SE220737.011 | % | 10 - 150% | 99 |
| | MW8 | SE220737.012 | % | 10 - 150% | 101 |
| | MW9 | SE220737.013 | % | 10 - 150% | 90 |
| | MW10 | SE220737.014 | % | 10 - 150% | 95 |
| | QC2 | SE220737.016 | % | 10 - 150% | 95 |
| | QCC | SE220737.017 | % | 10 - 150% | 113 |
| | QCD | SE220737.018 | % | 10 - 150% | 102 |
| (13C4_PFOA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 106 |
| | MW5 | SE220737.009 | % | 10 - 150% | 103 |
| | MW6 | SE220737.010 | % | 10 - 150% | 106 |
| | MW7 | SE220737.011 | % | 10 - 150% | 105 |
| | MW8 | SE220737.012 | % | 10 - 150% | 97 |
| | MW9 | SE220737.013 | % | 10 - 150% | 93 |
| | MW10 | SE220737.014 | % | 10 - 150% | 94 |
| | QC2 | SE220737.016 | % | 10 - 150% | 107 |
| | QCC | SE220737.017 | % | 10 - 150% | 101 |
| | QCD | SE220737.018 | % | 10 - 150% | 103 |
| (13C4-PFBA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 101 |
| | MW5 | SE220737.009 | % | 10 - 150% | 100 |
| | MW6 | SE220737.010 | % | 10 - 150% | 101 |
| | MW7 | SE220737.011 | % | 10 - 150% | 99 |
| | MW8 | SE220737.012 | % | 10 - 150% | 102 |
| | MW9 | SE220737.013 | % | 10 - 150% | 100 |
| | MW10 | SE220737.014 | % | 10 - 150% | 101 |
| | QC2 | SE220737.016 | % | 10 - 150% | 100 |
| | QCC | SE220737.017 | % | 10 - 150% | 100 |
| | QCD | SE220737.018 | % | 10 - 150% | 100 |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 87 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level (continued)** **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C4-PFHpA) Isotopically Labelled Internal Recovery Standard | MW5 | SE220737.009 | % | 10 - 150% | 95 |
| | MW6 | SE220737.010 | % | 10 - 150% | 85 |
| | MW7 | SE220737.011 | % | 10 - 150% | 90 |
| | MW8 | SE220737.012 | % | 10 - 150% | 81 |
| | MW9 | SE220737.013 | % | 10 - 150% | 82 |
| | MW10 | SE220737.014 | % | 10 - 150% | 77 |
| | QC2 | SE220737.016 | % | 10 - 150% | 80 |
| | QCC | SE220737.017 | % | 10 - 150% | 79 |
| | QCD | SE220737.018 | % | 10 - 150% | 92 |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 61 |
| | MW5 | SE220737.009 | % | 10 - 150% | 65 |
| | MW6 | SE220737.010 | % | 10 - 150% | 61 |
| | MW7 | SE220737.011 | % | 10 - 150% | 60 |
| | MW8 | SE220737.012 | % | 10 - 150% | 57 |
| | MW9 | SE220737.013 | % | 10 - 150% | 58 |
| | MW10 | SE220737.014 | % | 10 - 150% | 57 |
| | QC2 | SE220737.016 | % | 10 - 150% | 57 |
| | QCC | SE220737.017 | % | 10 - 150% | 57 |
| | QCD | SE220737.018 | % | 10 - 150% | 59 |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 86 |
| | MW5 | SE220737.009 | % | 10 - 150% | 85 |
| | MW6 | SE220737.010 | % | 10 - 150% | 77 |
| | MW7 | SE220737.011 | % | 10 - 150% | 80 |
| | MW8 | SE220737.012 | % | 10 - 150% | 74 |
| | MW9 | SE220737.013 | % | 10 - 150% | 78 |
| | MW10 | SE220737.014 | % | 10 - 150% | 79 |
| | QC2 | SE220737.016 | % | 10 - 150% | 83 |
| | QCC | SE220737.017 | % | 10 - 150% | 77 |
| | QCD | SE220737.018 | % | 10 - 150% | 76 |
| (13C6-PFDA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 101 |
| | MW5 | SE220737.009 | % | 10 - 150% | 80 |
| | MW6 | SE220737.010 | % | 10 - 150% | 104 |
| | MW7 | SE220737.011 | % | 10 - 150% | 102 |
| | MW8 | SE220737.012 | % | 10 - 150% | 111 |
| | MW9 | SE220737.013 | % | 10 - 150% | 99 |
| | MW10 | SE220737.014 | % | 10 - 150% | 91 |
| | QC2 | SE220737.016 | % | 10 - 150% | 93 |
| | QCC | SE220737.017 | % | 10 - 150% | 98 |
| | QCD | SE220737.018 | % | 10 - 150% | 87 |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 87 |
| | MW5 | SE220737.009 | % | 10 - 150% | 91 |
| | MW6 | SE220737.010 | % | 10 - 150% | 90 |
| | MW7 | SE220737.011 | % | 10 - 150% | 92 |
| | MW8 | SE220737.012 | % | 10 - 150% | 93 |
| | MW9 | SE220737.013 | % | 10 - 150% | 91 |
| | MW10 | SE220737.014 | % | 10 - 150% | 82 |
| | QC2 | SE220737.016 | % | 10 - 150% | 90 |
| | QCC | SE220737.017 | % | 10 - 150% | 96 |
| | QCD | SE220737.018 | % | 10 - 150% | 95 |
| (13C8-PFOS) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 112 |
| | MW5 | SE220737.009 | % | 10 - 150% | 121 |
| | MW6 | SE220737.010 | % | 10 - 150% | 95 |
| | MW7 | SE220737.011 | % | 10 - 150% | 102 |
| | MW8 | SE220737.012 | % | 10 - 150% | 94 |
| | MW9 | SE220737.013 | % | 10 - 150% | 93 |
| | MW10 | SE220737.014 | % | 10 - 150% | 98 |
| | QC2 | SE220737.016 | % | 10 - 150% | 90 |
| | QCC | SE220737.017 | % | 10 - 150% | 108 |
| | QCD | SE220737.018 | % | 10 - 150% | 96 |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 72 |
| | MW5 | SE220737.009 | % | 10 - 150% | 75 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level (continued)** **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C8-PFOSA) Isotopically Labelled Internal Recovery Standard | MW6 | SE220737.010 | % | 10 - 150% | 60 |
| | MW7 | SE220737.011 | % | 10 - 150% | 77 |
| | MW8 | SE220737.012 | % | 10 - 150% | 61 |
| | MW9 | SE220737.013 | % | 10 - 150% | 70 |
| | MW10 | SE220737.014 | % | 10 - 150% | 64 |
| | QC2 | SE220737.016 | % | 10 - 150% | 76 |
| | QCC | SE220737.017 | % | 10 - 150% | 69 |
| | QCD | SE220737.018 | % | 10 - 150% | 62 |
| (13C9-PFNA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 107 |
| | MW5 | SE220737.009 | % | 10 - 150% | 108 |
| | MW6 | SE220737.010 | % | 10 - 150% | 97 |
| | MW7 | SE220737.011 | % | 10 - 150% | 86 |
| | MW8 | SE220737.012 | % | 10 - 150% | 97 |
| | MW9 | SE220737.013 | % | 10 - 150% | 94 |
| | MW10 | SE220737.014 | % | 10 - 150% | 102 |
| | QC2 | SE220737.016 | % | 10 - 150% | 101 |
| | QCC | SE220737.017 | % | 10 - 150% | 95 |
| | QCD | SE220737.018 | % | 10 - 150% | 92 |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 69 |
| | MW5 | SE220737.009 | % | 10 - 150% | 62 |
| | MW6 | SE220737.010 | % | 10 - 150% | 64 |
| | MW7 | SE220737.011 | % | 10 - 150% | 66 |
| | MW8 | SE220737.012 | % | 10 - 150% | 53 |
| | MW9 | SE220737.013 | % | 10 - 150% | 65 |
| | MW10 | SE220737.014 | % | 10 - 150% | 51 |
| | QC2 | SE220737.016 | % | 10 - 150% | 63 |
| | QCC | SE220737.017 | % | 10 - 150% | 63 |
| | QCD | SE220737.018 | % | 10 - 150% | 70 |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 72 |
| | MW5 | SE220737.009 | % | 10 - 150% | 57 |
| | MW6 | SE220737.010 | % | 10 - 150% | 63 |
| | MW7 | SE220737.011 | % | 10 - 150% | 72 |
| | MW8 | SE220737.012 | % | 10 - 150% | 58 |
| | MW9 | SE220737.013 | % | 10 - 150% | 64 |
| | MW10 | SE220737.014 | % | 10 - 150% | 70 |
| | QC2 | SE220737.016 | % | 10 - 150% | 66 |
| | QCC | SE220737.017 | % | 10 - 150% | 55 |
| | QCD | SE220737.018 | % | 10 - 150% | 61 |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 61 |
| | MW5 | SE220737.009 | % | 10 - 150% | 55 |
| | MW6 | SE220737.010 | % | 10 - 150% | 55 |
| | MW7 | SE220737.011 | % | 10 - 150% | 66 |
| | MW8 | SE220737.012 | % | 10 - 150% | 61 |
| | MW9 | SE220737.013 | % | 10 - 150% | 67 |
| | MW10 | SE220737.014 | % | 10 - 150% | 49 |
| | QC2 | SE220737.016 | % | 10 - 150% | 61 |
| | QCC | SE220737.017 | % | 10 - 150% | 65 |
| | QCD | SE220737.018 | % | 10 - 150% | 63 |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 78 |
| | MW5 | SE220737.009 | % | 10 - 150% | 47 |
| | MW6 | SE220737.010 | % | 10 - 150% | 59 |
| | MW7 | SE220737.011 | % | 10 - 150% | 73 |
| | MW8 | SE220737.012 | % | 10 - 150% | 77 |
| | MW9 | SE220737.013 | % | 10 - 150% | 55 |
| | MW10 | SE220737.014 | % | 10 - 150% | 76 |
| | QC2 | SE220737.016 | % | 10 - 150% | 75 |
| | QCC | SE220737.017 | % | 10 - 150% | 71 |
| | QCD | SE220737.018 | % | 10 - 150% | 59 |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 53 |
| | MW5 | SE220737.009 | % | 10 - 150% | 57 |
| | MW6 | SE220737.010 | % | 10 - 150% | 46 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level (continued)** — Method: MA-1523

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard | MW7 | SE220737.011 | % | 10 - 150% | 58 |
| | MW8 | SE220737.012 | % | 10 - 150% | 46 |
| | MW9 | SE220737.013 | % | 10 - 150% | 60 |
| | MW10 | SE220737.014 | % | 10 - 150% | 50 |
| | QC2 | SE220737.016 | % | 10 - 150% | 54 |
| | QCC | SE220737.017 | % | 10 - 150% | 51 |
| | QCD | SE220737.018 | % | 10 - 150% | 49 |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 54 |
| | MW5 | SE220737.009 | % | 10 - 150% | 62 |
| | MW6 | SE220737.010 | % | 10 - 150% | 44 |
| | MW7 | SE220737.011 | % | 10 - 150% | 54 |
| | MW8 | SE220737.012 | % | 10 - 150% | 49 |
| | MW9 | SE220737.013 | % | 10 - 150% | 56 |
| | MW10 | SE220737.014 | % | 10 - 150% | 45 |
| | QC2 | SE220737.016 | % | 10 - 150% | 50 |
| | QCC | SE220737.017 | % | 10 - 150% | 48 |
| | QCD | SE220737.018 | % | 10 - 150% | 51 |

**Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples** — Method: MA-1523

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 130% | 69 |
| | HA2-3 | SE220737.002 | % | 0 - 130% | 84 |
| | HA3-1 | SE220737.003 | % | 0 - 130% | 63 |
| | HA3-2 | SE220737.004 | % | 0 - 130% | 55 |
| | HA4-0 | SE220737.005 | % | 0 - 130% | 49 |
| | HA4-1 | SE220737.006 | % | 0 - 130% | 55 |
| | HA4-2 | SE220737.007 | % | 0 - 130% | 49 |
| | QC1 | SE220737.015 | % | 0 - 130% | 38 |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 87 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 79 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 79 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 87 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 82 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 86 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 81 |
| | QC1 | SE220737.015 | % | 0 - 150% | 91 |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 90 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 79 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 82 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 83 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 85 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 81 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 79 |
| | QC1 | SE220737.015 | % | 0 - 150% | 90 |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 98 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 81 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 70 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 74 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 74 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 72 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 69 |
| | QC1 | SE220737.015 | % | 0 - 150% | 78 |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 107 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 101 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 80 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 87 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 85 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 85 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 90 |
| | QC1 | SE220737.015 | % | 0 - 150% | 79 |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 36 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)** **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard | HA2-3 | SE220737.002 | % | 0 - 150% | 38 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 33 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 38 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 27 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 24 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 22 |
| | QC1 | SE220737.015 | % | 0 - 150% | 15 |
| (13C3-PFBS) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 83 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 77 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 83 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 89 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 90 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 84 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 82 |
| | QC1 | SE220737.015 | % | 0 - 150% | 91 |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 101 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 102 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 99 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 88 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 105 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 91 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 104 |
| | QC1 | SE220737.015 | % | 0 - 150% | 104 |
| (13C4_PFOA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 95 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 103 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 101 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 106 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 99 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 103 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 102 |
| | QC1 | SE220737.015 | % | 0 - 150% | 104 |
| (13C4-PFBA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 100 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 102 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 101 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 101 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 100 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 101 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 99 |
| | QC1 | SE220737.015 | % | 0 - 150% | 103 |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 93 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 96 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 98 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 106 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 96 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 100 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 96 |
| | QC1 | SE220737.015 | % | 0 - 150% | 102 |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 90 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 92 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 95 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 104 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 92 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 103 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 96 |
| | QC1 | SE220737.015 | % | 0 - 150% | 102 |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 102 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 105 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 101 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 102 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 108 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 105 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)** **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C5-PFPeA) Isotopically Labelled Internal Recovery Standard | HA4-2 | SE220737.007 | % | 0 - 150% | 104 |
| | QC1 | SE220737.015 | % | 0 - 150% | 105 |
| (13C6-PFDA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 112 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 93 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 104 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 108 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 111 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 82 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 110 |
| | QC1 | SE220737.015 | % | 0 - 150% | 98 |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 112 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 114 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 99 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 105 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 111 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 97 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 115 |
| | QC1 | SE220737.015 | % | 0 - 150% | 95 |
| (13C8-PFOS) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 105 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 96 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 99 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 87 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 101 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 94 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 101 |
| | QC1 | SE220737.015 | % | 0 - 150% | 108 |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 52 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 44 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 71 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 53 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 66 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 60 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 60 |
| | QC1 | SE220737.015 | % | 0 - 150% | 50 |
| (13C9-PFNA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 101 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 102 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 94 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 93 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 105 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 97 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 100 |
| | QC1 | SE220737.015 | % | 0 - 150% | 95 |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 45 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 39 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 53 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 49 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 59 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 50 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 47 |
| | QC1 | SE220737.015 | % | 0 - 150% | 45 |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 57 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 57 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 64 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 59 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 61 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 69 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 56 |
| | QC1 | SE220737.015 | % | 0 - 150% | 56 |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 34 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 31 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 50 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)** — Method: MA-1523

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard | HA3-2 | SE220737.004 | % | 0 - 150% | 45 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 52 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 44 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 38 |
| | QC1 | SE220737.015 | % | 0 - 150% | 39 |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 56 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 50 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 54 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 55 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 57 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 62 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 59 |
| | QC1 | SE220737.015 | % | 0 - 150% | 57 |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 42 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 36 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 56 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 45 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 58 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 56 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 51 |
| | QC1 | SE220737.015 | % | 0 - 150% | 42 |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 40 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 35 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 54 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 47 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 58 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 51 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 47 |
| | QC1 | SE220737.015 | % | 0 - 150% | 43 |

**VOC's in Soil** — Method: ME-(AU)-[ENV]AN433

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Bromofluorobenzene (Surrogate) | HA1-3 | SE220737.001 | % | 60 - 130% | 81 |
| | HA2-3 | SE220737.002 | % | 60 - 130% | 92 |
| | QC1 | SE220737.015 | % | 60 - 130% | 80 |
| d4-1,2-dichloroethane (Surrogate) | HA1-3 | SE220737.001 | % | 60 - 130% | 85 |
| | HA2-3 | SE220737.002 | % | 60 - 130% | 89 |
| | QC1 | SE220737.015 | % | 60 - 130% | 91 |
| d8-toluene (Surrogate) | HA1-3 | SE220737.001 | % | 60 - 130% | 65 |
| | HA2-3 | SE220737.002 | % | 60 - 130% | 73 |
| | QC1 | SE220737.015 | % | 60 - 130% | 71 |

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Bromofluorobenzene (Surrogate) | HA1-3 | SE220737.001 | % | 60 - 130% | 81 |
| | HA2-3 | SE220737.002 | % | 60 - 130% | 92 |
| | QC1 | SE220737.015 | % | 60 - 130% | 80 |
| d4-1,2-dichloroethane (Surrogate) | HA1-3 | SE220737.001 | % | 60 - 130% | 85 |
| | HA2-3 | SE220737.002 | % | 60 - 130% | 89 |
| | QC1 | SE220737.015 | % | 60 - 130% | 91 |
| d8-toluene (Surrogate) | HA1-3 | SE220737.001 | % | 60 - 130% | 65 |
| | HA2-3 | SE220737.002 | % | 60 - 130% | 73 |
| | QC1 | SE220737.015 | % | 60 - 130% | 71 |

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 |
|---|---|---|---|---|
| LB226913.001 | Mercury | mg/L | 0.0001 | <0.0001 |

### Mercury in Soil

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB227223.001 | Mercury | mg/kg | 0.05 | <0.05 |

### OC Pesticides in Soil

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB226970.001 | | Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 |
| | | Alpha BHC | mg/kg | 0.1 | <0.1 |
| | | Lindane | mg/kg | 0.1 | <0.1 |
| | | Heptachlor | mg/kg | 0.1 | <0.1 |
| | | Aldrin | mg/kg | 0.1 | <0.1 |
| | | Beta BHC | mg/kg | 0.1 | <0.1 |
| | | Delta BHC | mg/kg | 0.1 | <0.1 |
| | | Heptachlor epoxide | mg/kg | 0.1 | <0.1 |
| | | Alpha Endosulfan | mg/kg | 0.2 | <0.2 |
| | | Gamma Chlordane | mg/kg | 0.1 | <0.1 |
| | | Alpha Chlordane | mg/kg | 0.1 | <0.1 |
| | | 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 |
| | | p,p'-DDT | mg/kg | 0.1 | <0.1 |
| | | Endosulfan sulphate | mg/kg | 0.1 | <0.1 |
| | | Endrin Aldehyde | mg/kg | 0.1 | <0.1 |
| | | Methoxychlor | mg/kg | 0.1 | <0.1 |
| | | Endrin Ketone | mg/kg | 0.1 | <0.1 |
| | | Isodrin | mg/kg | 0.1 | <0.1 |
| | | Mirex | mg/kg | 0.1 | <0.1 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 93 |

### PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB226970.001 | | 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) | % | - | 92 |
| | | 2-fluorobiphenyl (Surrogate) | % | - | 86 |
| | | d14-p-terphenyl (Surrogate) | % | - | 88 |

### PCBs in Soil

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

| Sample Number | Parameter | Units | LOR |
|---|---|---|---|

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.

### PCBs in Soil (continued)

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB226970.001 | | 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 | <1 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 93 |

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

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB227222.001 | 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 |
|---|---|---|---|---|
| LB227006.001 | Arsenic, As | µg/L | 1 | <1 |
| | Cadmium, Cd | µg/L | 0.1 | <0.1 |
| | Chromium, Cr | µg/L | 1 | <1 |
| | Copper, Cu | µg/L | 1 | <1 |
| | Lead, Pb | µg/L | 1 | <1 |
| | Nickel, Ni | µg/L | 1 | <1 |
| | Zinc, Zn | µg/L | 5 | <5 |
| LB227006.025 | Arsenic, As | µg/L | 1 | <1 |
| | Cadmium, Cd | µg/L | 0.1 | <0.1 |
| | Chromium, Cr | µg/L | 1 | <1 |
| | Copper, Cu | µg/L | 1 | <1 |
| | Lead, Pb | µg/L | 1 | <1 |
| | Nickel, Ni | µg/L | 1 | <1 |
| | Zinc, Zn | µg/L | 5 | <5 |

### TRH (Total Recoverable Hydrocarbons) in Soil

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB226970.001 | 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 |
|---|---|---|---|---|---|
| LB226974.001 | 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 | mg/kg | 0.1 | <0.1 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | % | - | 89 |
| | | d8-toluene (Surrogate) | % | - | 76 |
| | | Bromofluorobenzene (Surrogate) | % | - | 93 |
| | Totals | Total BTEX | mg/kg | 0.6 | <0.6 |

### Volatile Petroleum Hydrocarbons in Soil

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

| Sample Number | Parameter | Units | LOR |
|---|---|---|---|

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.

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB226974.001 | | TRH C6-C9 | mg/kg | 20 | <20 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | % | - | 89 |

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

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

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

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

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

## Mercury (dissolved) in Water

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE220737.008 | LB226913.014 | Mercury | µg/L | 0.0001 | <0.0001 | <0.0001 | 196 | 2 |
| SE220758.007 | LB226913.024 | Mercury | µg/L | 0.0001 | <0.0001 | <0.0001 | 200 | 199 |

## Mercury in Soil

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE220738.001 | LB227223.014 | Mercury | mg/kg | 0.05 | <0.05 | <0.05 | 200 | 0 |
| SE220738.009 | LB227223.023 | Mercury | mg/kg | 0.05 | <0.05 | <0.05 | 200 | 0 |

## Moisture Content

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE220780.030 | LB227109.011 | % Moisture | %w/w | 1 | <1 | <1 | 200 | 0 |
| SE220780.033 | LB227109.015 | % Moisture | %w/w | 1 | 20.3 | 19.3 | 35 | 5 |

## OC Pesticides in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220749.001 | LB226970.014 | | Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Alpha BHC | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Lindane | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Heptachlor | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Aldrin | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Beta BHC | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Delta BHC | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Heptachlor epoxide | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | o,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Alpha Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Gamma Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Alpha Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | trans-Nonachlor | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | p,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Dieldrin | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Endrin | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | o,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | o,p'-DDT | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Beta Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | p,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | p,p'-DDT | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Endosulfan sulphate | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Endrin Aldehyde | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Methoxychlor | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Endrin Ketone | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Isodrin | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Mirex | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Total CLP OC Pesticides | mg/kg | 1 | <1 | <1 | 200 | 0 |
| | | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0.16 | 0.15 | 30 | 5 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE220749.001 | LB226970.014 | Naphthalene | mg/kg | 0.1 | <0.1 | 0.2 | 121 | 40 |
| | | 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | 0.1 | 200 | 10 |
| | | 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Acenaphthylene | mg/kg | 0.1 | 0.1 | 0.2 | 110 | 40 |
| | | 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 | 0.8 | 45 | 50 ② |
| | | Anthracene | mg/kg | 0.1 | 0.2 | 0.3 | 74 | 40 |
| | | Fluoranthene | mg/kg | 0.1 | 1.0 | 1.6 | 38 | 45 ② |
| | | Pyrene | mg/kg | 0.1 | 1.1 | 1.7 | 37 | 44 ② |
| | | Benzo(a)anthracene | mg/kg | 0.1 | 0.6 | 0.9 | 43 | 45 ② |
| | | Chrysene | mg/kg | 0.1 | 0.5 | 0.9 | 44 | 54 ② |

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

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

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

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

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

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

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220749.001 | LB226970.014 | | Benzo(b&j)fluoranthene | mg/kg | 0.1 | 0.9 | 1.6 | 38 | 58 ② |
| | | | Benzo(k)fluoranthene | mg/kg | 0.1 | 0.5 | 0.7 | 48 | 36 |
| | | | Benzo(a)pyrene | mg/kg | 0.1 | 0.9 | 1.5 | 39 | 49 ② |
| | | | Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | 0.6 | 1.0 | 43 | 54 ② |
| | | | Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(ghi)perylene | mg/kg | 0.1 | 0.6 | 1.0 | 43 | 54 ② |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=0 | mg/kg | 0.2 | 1.1 | 1.9 | 23 | 49 ② |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | mg/kg | 0.3 | 1.2 | 2.0 | 29 | 46 ② |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | mg/kg | 0.2 | 1.2 | 1.9 | 23 | 48 ② |
| | | | Total PAH (18) | mg/kg | 0.8 | 7.3 | 12 | 38 | 51 ② |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.5 | 0.5 | 30 | 2 |
| | | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.5 | 0.5 | 30 | 2 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.5 | 0.4 | 30 | 5 |

## PCBs in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220749.001 | LB226970.014 | | Arochlor 1016 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1221 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1232 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1242 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1248 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1254 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1260 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1262 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1268 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Total PCBs (Arochlors) | mg/kg | 1 | <1 | <1 | 200 | 0 |
| | | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0 | 0 | 30 | 5 |

## 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 % |
|---|---|---|---|---|---|---|---|---|
| SE220738.001 | LB227222.014 | Arsenic, As | mg/kg | 1 | 8 | 7 | 44 | 6 |
| | | Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | Chromium, Cr | mg/kg | 0.5 | 11 | 11 | 35 | 7 |
| | | Copper, Cu | mg/kg | 0.5 | 68 | 80 | 31 | 16 |
| | | Nickel, Ni | mg/kg | 0.5 | 2.5 | 5.5 | 43 | 76 ② |
| | | Lead, Pb | mg/kg | 1 | 22 | 26 | 34 | 15 |
| | | Zinc, Zn | mg/kg | 2 | 29 | 32 | 37 | 9 |
| SE220738.009 | LB227222.023 | Arsenic, As | mg/kg | 1 | 7 | 7 | 44 | 12 |
| | | Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | Chromium, Cr | mg/kg | 0.5 | 9.8 | 11 | 35 | 15 |
| | | Copper, Cu | mg/kg | 0.5 | 59 | 130 | 31 | 74 ② |
| | | Nickel, Ni | mg/kg | 0.5 | 1.8 | 5.9 | 43 | 108 ② |
| | | Lead, Pb | mg/kg | 1 | 25 | 40 | 33 | 48 ② |
| | | Zinc, Zn | mg/kg | 2 | 25 | 56 | 35 | 75 ② |

## Trace Metals (Dissolved) in Water by ICPMS

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE220737.013 | LB227006.014 | Arsenic, As | µg/L | 1 | <1 | <1 | 156 | 0 |
| | | Cadmium, Cd | µg/L | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Chromium, Cr | µg/L | 1 | 3 | 3 | 51 | 1 |
| | | Copper, Cu | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | Lead, Pb | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | Nickel, Ni | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | Zinc, Zn | µg/L | 5 | <5 | <5 | 200 | 0 |
| SE220758.007 | LB227006.027 | Arsenic, As | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | Cadmium, Cd | µg/L | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Chromium, Cr | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | Copper, Cu | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | Lead, Pb | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | Nickel, Ni | µg/L | 1 | 1 | 1 | 93 | 11 |
| | | Zinc, Zn | µg/L | 5 | 6 | 5 | 109 | 8 |

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

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

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

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

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

**TRH (Total Recoverable Hydrocarbons) in Soil** — Method: ME-(AU)-[ENV]AN403

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220749.001 | LB226970.014 | | TRH C10-C14 | mg/kg | 20 | <20 | <20 | 200 | 0 |
| | | | TRH C15-C28 | mg/kg | 45 | 87 | 270 | 55 | 103 ② |
| | | | TRH C29-C36 | mg/kg | 45 | 110 | 350 | 50 | 103 ② |
| | | | TRH C37-C40 | mg/kg | 100 | <100 | <100 | 200 | 0 |
| | | | TRH C10-C36 Total | mg/kg | 110 | 200 | 620 | 57 | 103 ② |
| | | | TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | 680 | 79 | 105 ② |
| | | TRH F Bands | TRH >C10-C16 | mg/kg | 25 | <25 | <25 | 200 | 0 |
| | | | TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | <25 | <25 | 200 | 0 |
| | | | TRH >C16-C34 (F3) | mg/kg | 90 | 180 | 540 | 55 | 100 ② |
| | | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | 140 | 200 | 15 |

**VOC's in Soil** — Method: ME-(AU)-[ENV]AN433

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220780.027 | LB226974.017 | Monocyclic | Benzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Aromatic | Toluene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 171 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 8.2 | 9.0 | 50 | 10 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 7.7 | 7.1 | 50 | 8 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.0 | 8.0 | 50 | 0 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | | Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | 200 | 0 |

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220780.027 | LB226974.017 | | 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 | - | 8.2 | 9.0 | 30 | 10 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 7.7 | 7.1 | 30 | 8 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.0 | 8.0 | 30 | 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 |

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]AN312

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB227223.002 | Mercury | mg/kg | 0.05 | 0.19 | 0.2 | 70 - 130 | 97 |

### OC Pesticides in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226970.002 | | Heptachlor | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 112 |
| | | Aldrin | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 93 |
| | | Delta BHC | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 96 |
| | | Dieldrin | mg/kg | 0.2 | <0.2 | 0.2 | 60 - 140 | 94 |
| | | Endrin | mg/kg | 0.2 | 0.2 | 0.2 | 60 - 140 | 111 |
| | | p,p'-DDT | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 113 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0.14 | 0.15 | 40 - 130 | 93 |

### PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226970.002 | | Naphthalene | mg/kg | 0.1 | 3.3 | 4 | 60 - 140 | 82 |
| | | Acenaphthylene | mg/kg | 0.1 | 3.4 | 4 | 60 - 140 | 86 |
| | | Acenaphthene | mg/kg | 0.1 | 3.3 | 4 | 60 - 140 | 83 |
| | | Phenanthrene | mg/kg | 0.1 | 3.3 | 4 | 60 - 140 | 82 |
| | | Anthracene | mg/kg | 0.1 | 3.3 | 4 | 60 - 140 | 83 |
| | | Fluoranthene | mg/kg | 0.1 | 3.3 | 4 | 60 - 140 | 82 |
| | | Pyrene | mg/kg | 0.1 | 3.4 | 4 | 60 - 140 | 85 |
| | | Benzo(a)pyrene | mg/kg | 0.1 | 3.6 | 4 | 60 - 140 | 90 |
| | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.5 | 0.5 | 40 - 130 | 96 |
| | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.5 | 0.5 | 40 - 130 | 94 |
| | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 88 |

### PCBs in Soil

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

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB226970.002 | Arochlor 1260 | mg/kg | 0.2 | 0.5 | 0.4 | 60 - 140 | 125 |

### 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 % |
|---|---|---|---|---|---|---|---|
| LB227222.002 | Arsenic, As | mg/kg | 1 | 360 | 318.22 | 80 - 120 | 113 |
| | Cadmium, Cd | mg/kg | 0.3 | 5.9 | 4.81 | 70 - 130 | 123 |
| | Chromium, Cr | mg/kg | 0.5 | 41 | 38.31 | 80 - 120 | 106 |
| | Copper, Cu | mg/kg | 0.5 | 330 | 290 | 80 - 120 | 115 |
| | Nickel, Ni | mg/kg | 0.5 | 200 | 187 | 80 - 120 | 108 |
| | Lead, Pb | mg/kg | 1 | 97 | 89.9 | 80 - 120 | 108 |
| | Zinc, Zn | mg/kg | 2 | 290 | 273 | 80 - 120 | 108 |

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

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

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB227006.002 | Arsenic, As | µg/L | 1 | 21 | 20 | 80 - 120 | 103 |
| | Cadmium, Cd | µg/L | 0.1 | 21 | 20 | 80 - 120 | 104 |
| | Chromium, Cr | µg/L | 1 | 21 | 20 | 80 - 120 | 106 |
| | Copper, Cu | µg/L | 1 | 21 | 20 | 80 - 120 | 107 |
| | Lead, Pb | µg/L | 1 | 22 | 20 | 80 - 120 | 109 |
| | Nickel, Ni | µg/L | 1 | 22 | 20 | 80 - 120 | 108 |
| | Zinc, Zn | µg/L | 5 | 21 | 20 | 80 - 120 | 107 |
| LB227006.026 | Arsenic, As | µg/L | 1 | 20 | 20 | 80 - 120 | 101 |
| | Cadmium, Cd | µg/L | 0.1 | 20 | 20 | 80 - 120 | 101 |
| | Chromium, Cr | µg/L | 1 | 20 | 20 | 80 - 120 | 99 |
| | Copper, Cu | µg/L | 1 | 21 | 20 | 80 - 120 | 105 |
| | Lead, Pb | µg/L | 1 | 21 | 20 | 80 - 120 | 105 |
| | Nickel, Ni | µg/L | 1 | 21 | 20 | 80 - 120 | 104 |
| | Zinc, Zn | µg/L | 5 | 22 | 20 | 80 - 120 | 109 |

### TRH (Total Recoverable Hydrocarbons) in Soil

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

| Sample Number | Parameter | Units | LOR |
|---|---|---|---|

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

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

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

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226970.002 | | TRH C10-C14 | mg/kg | 20 | 43 | 40 | 60 - 140 | 108 |
| | | TRH C15-C28 | mg/kg | 45 | <45 | 40 | 60 - 140 | 100 |
| | | TRH C29-C36 | mg/kg | 45 | <45 | 40 | 60 - 140 | 83 |
| | TRH F Bands | TRH >C10-C16 | mg/kg | 25 | 41 | 40 | 60 - 140 | 103 |
| | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | 40 | 60 - 140 | 98 |
| | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | 20 | 60 - 140 | 75 |

### VOC's in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226974.002 | Monocyclic | Benzene | mg/kg | 0.1 | 4.1 | 5 | 60 - 140 | 81 |
| | Aromatic | Toluene | mg/kg | 0.1 | 3.8 | 5 | 60 - 140 | 76 |
| | | Ethylbenzene | mg/kg | 0.1 | 4.4 | 5 | 60 - 140 | 88 |
| | | m/p-xylene | mg/kg | 0.2 | 8.8 | 10 | 60 - 140 | 88 |
| | | o-xylene | mg/kg | 0.1 | 4.5 | 5 | 60 - 140 | 90 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 8.5 | 10 | 70 - 130 | 85 |
| | | d8-toluene (Surrogate) | mg/kg | - | 8.3 | 10 | 70 - 130 | 83 |
| | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.4 | 10 | 70 - 130 | 84 |

### Volatile Petroleum Hydrocarbons in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226974.002 | | TRH C6-C10 | mg/kg | 25 | 74 | 92.5 | 60 - 140 | 80 |
| | | TRH C6-C9 | mg/kg | 20 | 64 | 80 | 60 - 140 | 80 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 8.5 | 10 | 70 - 130 | 85 |
| | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.4 | 10 | 70 - 130 | 84 |
| | VPH F Bands | TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | 48 | 62.5 | 60 - 140 | 77 |

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

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

## Mercury in Soil

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

| QC Sample | Sample Number | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE220718.001 | LB227223.004 | Mercury | mg/kg | 0.05 | 0.23 | <0.05 | 0.2 | 105 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE220756.028 | LB226970.026 | | Naphthalene | mg/kg | 0.1 | <0.1 | 4 | 84 |
| | | | 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | - | - |
| | | | 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | - | - |
| | | | Acenaphthylene | mg/kg | 0.1 | <0.1 | 4 | 87 |
| | | | Acenaphthene | mg/kg | 0.1 | <0.1 | 4 | 86 |
| | | | Fluorene | mg/kg | 0.1 | <0.1 | - | - |
| | | | Phenanthrene | mg/kg | 0.1 | <0.1 | 4 | 83 |
| | | | Anthracene | mg/kg | 0.1 | <0.1 | 4 | 83 |
| | | | Fluoranthene | mg/kg | 0.1 | <0.1 | 4 | 83 |
| | | | Pyrene | mg/kg | 0.1 | <0.1 | 4 | 86 |
| | | | Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | - | - |
| | | | Chrysene | mg/kg | 0.1 | <0.1 | - | - |
| | | | Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | - | - |
| | | | Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | - | - |
| | | | Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | 4 | 89 |
| | | | 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 | - | - |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=0 | TEQ (mg/kg) | 0.2 | <0.2 | - | - |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 0.3 | <0.3 | - | - |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | TEQ (mg/kg) | 0.2 | <0.2 | - | - |
| | | | Total PAH (18) | mg/kg | 0.8 | <0.8 | - | - |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.5 | - | 98 |
| | | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.5 | - | 96 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.5 | - | 92 |

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

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

| QC Sample | Sample Number | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE220718.001 | LB227222.004 | Arsenic, As | mg/kg | 1 | 48 | 4 | 50 | 88 |
| | | Cadmium, Cd | mg/kg | 0.3 | 46 | <0.3 | 50 | 91 |
| | | Chromium, Cr | mg/kg | 0.5 | 75 | 29 | 50 | 94 |
| | | Copper, Cu | mg/kg | 0.5 | 54 | 0.5 | 50 | 107 |
| | | Nickel, Ni | mg/kg | 0.5 | 52 | 1.6 | 50 | 100 |
| | | Lead, Pb | mg/kg | 1 | 59 | 11 | 50 | 95 |
| | | Zinc, Zn | mg/kg | 2 | 56 | 6.4 | 50 | 99 |

## Trace Metals (Dissolved) in Water by ICPMS

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

| QC Sample | Sample Number | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE220610A.010 | LB227006.004 | Zinc, Zn | µg/L | 5 | 25 | <5 | 20 | 115 |

## TRH (Total Recoverable Hydrocarbons) in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE220756.028 | LB226970.025 | | TRH C10-C14 | mg/kg | 20 | <20 | 40 | 118 |
| | | | TRH C15-C28 | mg/kg | 45 | <45 | 40 | 118 |
| | | | TRH C29-C36 | mg/kg | 45 | <45 | 40 | 98 |
| | | | TRH C37-C40 | mg/kg | 100 | <100 | - | - |
| | | | TRH C10-C36 Total | mg/kg | 110 | <110 | - | - |
| | | | TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | - | - |
| | | TRH F Bands | TRH >C10-C16 | mg/kg | 25 | <25 | 40 | 115 |
| | | | TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | <25 | - | - |
| | | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | 40 | 115 |
| | | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | - | - |

## VOC's in Soil

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

| QC Sample | Sample Number | Parameter | Units | LOR |
|---|---|---|---|---|

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

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

## VOC's in Soil (continued)

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE220737.001 | LB226974.004 | Monocyclic Aromatic | Benzene | mg/kg | 0.1 | 3.6 | <0.1 | 5 | 72 |
| | | | Toluene | mg/kg | 0.1 | 3.4 | <0.1 | 5 | 68 |
| | | | Ethylbenzene | mg/kg | 0.1 | 4.1 | <0.1 | 5 | 81 |
| | | | m/p-xylene | mg/kg | 0.2 | 8.2 | <0.2 | 10 | 82 |
| | | | o-xylene | mg/kg | 0.1 | 4.2 | <0.1 | 5 | 84 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 7.9 | 8.5 | 10 | 79 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 7.4 | 6.5 | 10 | 74 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.1 | 8.1 | 10 | 81 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | 12 | <0.3 | - | - |
| | | | Total BTEX | mg/kg | 0.6 | 24 | <0.6 | - | - |

## Volatile Petroleum Hydrocarbons in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE220737.001 | LB226974.004 | | TRH C6-C10 | mg/kg | 25 | 65 | <25 | 92.5 | 69 |
| | | | TRH C6-C9 | mg/kg | 20 | 56 | <20 | 80 | 70 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 7.9 | 8.5 | 10 | 79 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 7.4 | 6.5 | 10 | 74 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.1 | 8.1 | - | 81 |
| | | VPH F Bands | Benzene (F0) | mg/kg | 0.1 | 3.6 | <0.1 | - | - |
| | | | TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | 41 | <25 | 62.5 | 65 |

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

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

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

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

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

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

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

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# ANALYTICAL REPORT

Accreditation No. 2562

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| Project | **JME20005-6** | SGS Reference | **ME321066 R0** |
| Order Number | **SE220737** | Date Received | 17 Jun 2021 |
| Samples | 18 | Date Reported | 23 Jun 2021 |

COMMENTS

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

MA1523: Some surrogate recovery is outside of the acceptance criteria due to sample matrix interference.
MA1523: LCS recoveries were good for all compounds except PFTrDA.

SIGNATORIES

Adam ATKINSON
Australian Chemistry Manager

Sy NGUYEN
Senior Laboratory Technician

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME321066.001<br>Soil<br>11 Jun 2021<br>SE220737.001 | ME321066.002<br>Soil<br>11 Jun 2021<br>SE220737.002 | ME321066.003<br>Soil<br>11 Jun 2021<br>SE220737.003 | ME321066.004<br>Soil<br>11 Jun 2021<br>SE220737.004 |
|---|---|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples** | **Method: MA-1523** | **Tested: 18/6/2021** | | | | |
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| Total of PFAS (n=30) | mg/kg | 0.08 | <0.08 | <0.08 | <0.08 | <0.08 |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | **100** | **102** | **101** | **101** |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | **102** | **105** | **101** | **102** |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | **90** | **92** | **95** | **104** |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | **93** | **96** | **98** | **106** |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | **95** | **103** | **101** | **106** |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | **101** | **102** | **94** | **93** |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | **112** | **93** | **104** | **108** |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | **112** | **114** | **99** | **105** |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | **107** | **101** | **80** | **87** |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | **69** | **84** | **63** | **55** |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | **36** | **38** | **33** | **38** |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | **83** | **77** | **83** | **89** |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | **101** | **102** | **99** | **88** |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | **105** | **96** | **99** | **87** |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | **87** | **79** | **79** | **87** |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | **90** | **79** | **82** | **83** |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | **98** | **81** | **70** | **74** |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | **52** | **44** | **71** | **53** |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | **45** | **39** | **53** | **49** |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | **34** | **31** | **50** | **45** |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | **42** | **36** | **56** | **45** |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | **40** | **35** | **54** | **47** |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | **57** | **57** | **64** | **59** |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | **56** | **50** | **54** | **55** |

**Moisture Content** **Method: AN002** **Tested: 18/6/2021**

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME321066.001<br>Soil<br>11 Jun 2021<br>SE220737.001 | ME321066.002<br>Soil<br>11 Jun 2021<br>SE220737.002 | ME321066.003<br>Soil<br>11 Jun 2021<br>SE220737.003 | ME321066.004<br>Soil<br>11 Jun 2021<br>SE220737.004 |
|---|---|---|---|---|---|---|
| **Moisture Content Method: AN002 Tested: 18/6/2021 (continued)** | | | | | | |
| % Moisture* | %w/w | 1 | **7.3** | **5.0** | **5.0** | **18.6** |
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level Method: MA-1523 Tested: 21/6/2021** | | | | | | |
| Perfluorobutanoic acid (PFBA) | µg/L | 0.0005 | - | - | - | - |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.0005 | - | - | - | - |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.0005 | - | - | - | - |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.0005 | - | - | - | - |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.0005 | - | - | - | - |
| Perfluorononanoic acid (PFNA) | µg/L | 0.001 | - | - | - | - |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.001 | - | - | - | - |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.001 | - | - | - | - |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.001 | - | - | - | - |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.001 | - | - | - | - |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.001 | - | - | - | - |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.002 | - | - | - | - |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.001 | - | - | - | - |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.001 | - | - | - | - |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.0002 | - | - | - | - |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.0002 | - | - | - | - |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.0002 | - | - | - | - |
| Sum of PFHxS and PFOS | µg/L | 0.0002 | - | - | - | - |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.0005 | - | - | - | - |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.0005 | - | - | - | - |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.0005 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.0005 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.0005 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.0005 | - | - | - | - |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.002 | - | - | - | - |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.0025 | - | - | - | - |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.0025 | - | - | - | - |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | - | - | - | - |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | - | - | - | - |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.0025 | - | - | - | - |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.0025 | - | - | - | - |
| Total PFAS (n=30) | µg/L | 0.006 | - | - | - | - |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Sample Number | ME321066.001 | ME321066.002 | ME321066.003 | ME321066.004 |
| | | Sample Matrix | Soil | Soil | Soil | Soil |
| | | Sample Date | 11 Jun 2021 | 11 Jun 2021 | 11 Jun 2021 | 11 Jun 2021 |
| | | Sample Name | SE220737.001 | SE220737.002 | SE220737.003 | SE220737.004 |
| Parameter | Units | LOR | | | | |
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level** | **Method: MA-1523** | **Tested: 21/6/2021** | **(continued)** | | | |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME321066.005<br>Soil<br>11 Jun 2021<br>SE220737.005 | ME321066.006<br>Soil<br>11 Jun 2021<br>SE220737.006 | ME321066.007<br>Soil<br>11 Jun 2021<br>SE220737.007 | ME321066.008<br>Water<br>11 Jun 2021<br>SE220737.008 |
|---|---|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples** | **Method: MA-1523** | **Tested: 18/6/2021** | | | | |
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | <0.0008 | <0.0008 | <0.0008 | - |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | <0.0032 | <0.0032 | <0.0032 | - |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | - |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | - |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | - |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | - |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | - |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | - |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | - |
| Total of PFAS (n=30) | mg/kg | 0.08 | <0.08 | <0.08 | <0.08 | - |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | **100** | **101** | **99** | - |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | **108** | **105** | **104** | - |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | **92** | **103** | **96** | - |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | **96** | **100** | **96** | - |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | **99** | **103** | **102** | - |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | **105** | **97** | **100** | - |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | **111** | **82** | **110** | - |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | **111** | **97** | **115** | - |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | **85** | **85** | **90** | - |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | **49** | **55** | **49** | - |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | **27** | **24** | **22** | - |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | **90** | **84** | **82** | - |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | **105** | **91** | **104** | - |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | **101** | **94** | **101** | - |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | **82** | **86** | **81** | - |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | **85** | **81** | **79** | - |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | **74** | **72** | **69** | - |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | **66** | **60** | **60** | - |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | **59** | **50** | **47** | - |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | **52** | **44** | **38** | - |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | **58** | **56** | **51** | - |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | **58** | **51** | **47** | - |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | **61** | **69** | **56** | - |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | **57** | **62** | **59** | - |

**Moisture Content** **Method: AN002** **Tested: 18/6/2021**

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME321066.005<br>Soil<br>11 Jun 2021<br>SE220737.005 | ME321066.006<br>Soil<br>11 Jun 2021<br>SE220737.006 | ME321066.007<br>Soil<br>11 Jun 2021<br>SE220737.007 | ME321066.008<br>Water<br>11 Jun 2021<br>SE220737.008 |
|---|---|---|---|---|---|---|
| **Moisture Content Method: AN002 Tested: 21/6/2021 (continued)** | | | | | | |
| % Moisture* | %w/w | 1 | **7.4** | **7.0** | **16.8** | - |
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level Method: MA-1523 Tested: 21/6/2021** | | | | | | |
| Perfluorobutanoic acid (PFBA) | µg/L | 0.0005 | - | - | - | **0.035** |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.0005 | - | - | - | **0.014** |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.0005 | - | - | - | **0.016** |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.0005 | - | - | - | **0.0081** |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.0005 | - | - | - | **0.016** |
| Perfluorononanoic acid (PFNA) | µg/L | 0.001 | - | - | - | <0.001 |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.001 | - | - | - | <0.001 |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.001 | - | - | - | <0.001 |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.001 | - | - | - | <0.001 |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.001 | - | - | - | <0.001 |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.001 | - | - | - | <0.001 |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.002 | - | - | - | <0.002 |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.001 | - | - | - | **0.002** |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.001 | - | - | - | **0.002** |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.0002 | - | - | - | **0.068** |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.0002 | - | - | - | **0.0003** |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.0002 | - | - | - | **0.016** |
| Sum of PFHxS and PFOS | µg/L | 0.0002 | - | - | - | **0.084** |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.0005 | - | - | - | <0.0005 |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.0005 | - | - | - | <0.0005 |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.0005 | - | - | - | <0.0005 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.0005 | - | - | - | <0.0005 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.0005 | - | - | - | <0.0005 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.0005 | - | - | - | <0.0005 |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.002 | - | - | - | <0.002 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.0025 | - | - | - | <0.0025 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.0025 | - | - | - | <0.0025 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | - | - | - | <0.0025 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | - | - | - | <0.0025 |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.0025 | - | - | - | <0.0025 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.0025 | - | - | - | <0.0025 |
| Total PFAS (n=30) | µg/L | 0.006 | - | - | - | **0.18** |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **101** |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **86** |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **61** |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **87** |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **106** |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **107** |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **101** |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **87** |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **95** |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **91** |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **125** |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | - | - | - | **48** |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | - | - | - | **96** |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | - | - | - | **112** |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | **42** |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | **99** |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | **81** |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **72** |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **69** |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **61** |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | - | - | - | **53** |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | - | - | - | **54** |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **72** |

| | | | Sample Number | ME321066.005 | ME321066.006 | ME321066.007 | ME321066.008 |
|---|---|---|---|---|---|---|---|
| | | | Sample Matrix | Soil | Soil | Soil | Water |
| | | | Sample Date | 11 Jun 2021 | 11 Jun 2021 | 11 Jun 2021 | 11 Jun 2021 |
| | | | Sample Name | SE220737.005 | SE220737.006 | SE220737.007 | SE220737.008 |
| Parameter | Units | LOR | | | | | |
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level** | **Method: MA-1523** | **Tested: 17/6/2021** | **(continued)** | | | | |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - | - | **78** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME321066.009<br>Water<br>11 Jun 2021<br>SE220737.009 | ME321066.010<br>Water<br>11 Jun 2021<br>SE220737.010 | ME321066.011<br>Water<br>11 Jun 2021<br>SE220737.011 | ME321066.012<br>Water<br>11 Jun 2021<br>SE220737.012 |
|---|---|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 22/6/2021** | | | | | | |
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | - | - | - | - |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | - | - | - | - |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | - | - | - | - |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | - | - | - | - |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | - | - | - | - |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | - | - | - | - |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | - | - | - | - |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | - | - | - | - |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | - | - | - | - |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | - | - | - | - |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | - | - | - | - |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | - | - | - | - |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | - | - | - | - |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | - | - | - | - |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | - | - | - | - |
| Total of PFAS (n=30) | mg/kg | 0.08 | - | - | - | - |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - | - | - |

**Moisture Content Method: AN002 Tested: 21/6/2021**

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME321066.009<br>Water<br>11 Jun 2021<br>SE220737.009 | ME321066.010<br>Water<br>11 Jun 2021<br>SE220737.010 | ME321066.011<br>Water<br>11 Jun 2021<br>SE220737.011 | ME321066.012<br>Water<br>11 Jun 2021<br>SE220737.012 |
|---|---|---|---|---|---|---|
| **Moisture Content Method: AN002 Tested: 21/6/2021 (continued)** | | | | | | |
| % Moisture* | %w/w | 1 | - | - | - | - |
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level Method: MA-1523 Tested: 17/6/2021** | | | | | | |
| Perfluorobutanoic acid (PFBA) | µg/L | 0.0005 | **0.0066** | <0.0005 | **0.0014** | **0.0005** |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.0005 | **0.0030** | <0.0005 | **0.0025** | <0.0005 |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.0005 | **0.0065** | **0.0005** | **0.0022** | **0.0007** |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.0005 | **0.0044** | **0.0006** | **0.0011** | **0.0005** |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.0005 | **0.012** | <0.0005 | **0.0018** | **0.010** |
| Perfluorononanoic acid (PFNA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.001 | **0.001** | <0.001 | **0.003** | **0.001** |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.001 | <0.001 | <0.001 | **0.001** | <0.001 |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.0002 | **0.027** | <0.0002 | **0.021** | **0.026** |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.0002 | **0.0071** | <0.0002 | **0.0081** | **0.011** |
| Sum of PFHxS and PFOS | µg/L | 0.0002 | **0.034** | <0.0002 | **0.029** | **0.037** |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| Total PFAS (n=30) | µg/L | 0.006 | **0.067** | <0.0060 | **0.042** | **0.050** |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | **100** | **101** | **99** | **102** |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | **85** | **77** | **80** | **74** |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | **65** | **61** | **60** | **57** |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | **95** | **85** | **90** | **81** |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | **103** | **106** | **105** | **97** |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | **108** | **97** | **86** | **97** |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | **80** | **104** | **102** | **111** |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | **91** | **90** | **92** | **93** |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | **81** | **86** | **90** | **98** |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | **65** | **89** | **91** | **93** |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | **88** | **110** | **125** | **121** |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | **57** | **51** | **54** | **52** |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | **90** | **98** | **99** | **101** |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | **121** | **95** | **102** | **94** |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | **44** | **44** | **54** | **56** |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | **91** | **84** | **120** | **118** |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | **84** | **77** | **89** | **86** |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | **75** | **60** | **77** | **61** |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | **62** | **64** | **66** | **53** |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | **55** | **55** | **66** | **61** |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | **57** | **46** | **58** | **46** |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | **62** | **44** | **54** | **49** |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | **57** | **63** | **72** | **58** |

| | | | Sample Number | ME321066.009 | ME321066.010 | ME321066.011 | ME321066.012 |
|---|---|---|---|---|---|---|---|
| | | | Sample Matrix | Water | Water | Water | Water |
| | | | Sample Date | 11 Jun 2021 | 11 Jun 2021 | 11 Jun 2021 | 11 Jun 2021 |
| | | | Sample Name | SE220737.009 | SE220737.010 | SE220737.011 | SE220737.012 |
| Parameter | Units | LOR | | | | | |
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level** | **Method: MA-1523** | **Tested: 17/6/2021** | **(continued)** | | | | |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | **47** | **59** | **73** | **77** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | ME321066.013<br>Water<br>11 Jun 2021<br>SE220737.013 | ME321066.014<br>Water<br>11 Jun 2021<br>SE220737.014 | ME321066.015<br>Soil<br>11 Jun 2021<br>SE220737.015 | ME321066.016<br>Water<br>11 Jun 2021<br>SE220737.016 |
|---|---|---|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples** | **Method: MA-1523** | **Tested: 22/6/2021** | | | | | |
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | | - | - | <0.0008 | - |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | | - | - | <0.0032 | - |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | | - | - | <0.0016 | - |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | | - | - | <0.008 | - |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | | - | - | <0.008 | - |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | | - | - | <0.016 | - |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | | - | - | <0.016 | - |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | | - | - | <0.008 | - |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | | - | - | <0.008 | - |
| Total of PFAS (n=30) | mg/kg | 0.08 | | - | - | <0.08 | - |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | | - | - | **103** | - |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | | - | - | **105** | - |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | | - | - | **102** | - |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | | - | - | **102** | - |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | | - | - | **104** | - |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | | - | - | **95** | - |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | | - | - | **98** | - |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | | - | - | **95** | - |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | | - | - | **79** | - |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | | - | - | **38** | - |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | | - | - | **15** | - |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | | - | - | **91** | - |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | | - | - | **104** | - |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | | - | - | **108** | - |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | | - | - | **91** | - |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | | - | - | **90** | - |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | | - | - | **78** | - |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | | - | - | **50** | - |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | | - | - | **45** | - |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | | - | - | **39** | - |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | | - | - | **42** | - |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | | - | - | **43** | - |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | | - | - | **56** | - |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | | - | - | **57** | - |

**Moisture Content** **Method: AN002** **Tested: 21/6/2021**

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | ME321066.013<br>Water<br>11 Jun 2021<br>SE220737.013 | ME321066.014<br>Water<br>11 Jun 2021<br>SE220737.014 | ME321066.015<br>Soil<br>11 Jun 2021<br>SE220737.015 | ME321066.016<br>Water<br>11 Jun 2021<br>SE220737.016 |
|---|---|---|---|---|---|---|---|
| **Moisture Content Method: AN002 Tested: 21/6/2021 (continued)** | | | | | | | |
| % Moisture* | %w/w | 1 | | - | - | **7.8** | - |
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level Method: MA-1523 Tested: 17/6/2021** | | | | | | | |
| Perfluorobutanoic acid (PFBA) | µg/L | 0.0005 | | **0.0006** | **0.0097** | - | **0.033** |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.0005 | | <0.0005 | **0.0026** | - | **0.013** |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.0005 | | <0.0005 | **0.0054** | - | **0.014** |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.0005 | | <0.0005 | **0.0018** | - | **0.0086** |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.0005 | | <0.0005 | **0.018** | - | **0.017** |
| Perfluorononanoic acid (PFNA) | µg/L | 0.001 | | <0.001 | <0.001 | - | <0.001 |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.001 | | <0.001 | <0.001 | - | <0.001 |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.001 | | <0.001 | <0.001 | - | <0.001 |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.001 | | <0.001 | <0.001 | - | <0.001 |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.001 | | <0.001 | <0.001 | - | <0.001 |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.001 | | <0.001 | <0.001 | - | <0.001 |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.002 | | <0.002 | <0.002 | - | <0.002 |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.001 | | <0.001 | **0.001** | - | **0.002** |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.001 | | <0.001 | **0.001** | - | **0.002** |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.0002 | | **0.0005** | **0.034** | - | **0.058** |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.0002 | | <0.0002 | **0.0008** | - | **0.0003** |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.0002 | | **0.0007** | **0.026** | - | **0.020** |
| Sum of PFHxS and PFOS | µg/L | 0.0002 | | **0.0012** | **0.061** | - | **0.079** |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.0005 | | <0.0005 | <0.0005 | - | <0.0005 |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.0005 | | <0.0005 | <0.0005 | - | <0.0005 |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.0005 | | <0.0005 | <0.0005 | - | <0.0005 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.0005 | | <0.0005 | <0.0005 | - | <0.0005 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.0005 | | <0.0005 | <0.0005 | - | <0.0005 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.0005 | | <0.0005 | <0.0005 | - | <0.0005 |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.002 | | <0.002 | <0.002 | - | <0.002 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.0025 | | <0.0025 | <0.0025 | - | <0.0025 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.0025 | | <0.0025 | <0.0025 | - | <0.0025 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | | <0.0025 | <0.0025 | - | <0.0025 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | | <0.0025 | <0.0025 | - | <0.0025 |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.0025 | | <0.0025 | <0.0025 | - | <0.0025 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.0025 | | <0.0025 | <0.0025 | - | <0.0025 |
| Total PFAS (n=30) | µg/L | 0.006 | | <0.0060 | **0.10** | - | **0.17** |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | | **100** | **101** | - | **100** |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | | **78** | **79** | - | **83** |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | | **58** | **57** | - | **57** |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | | **82** | **77** | - | **80** |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | | **93** | **94** | - | **107** |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | | **94** | **102** | - | **101** |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | | **99** | **91** | - | **93** |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | | **91** | **82** | - | **90** |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | | **101** | **77** | - | **87** |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | | **108** | **77** | - | **101** |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | | **115** | **120** | - | **148** |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | | **47** | **49** | - | **44** |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | | **90** | **95** | - | **95** |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | | **93** | **98** | - | **90** |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | | **42** | **50** | - | **40** |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | | **83** | **109** | - | **98** |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | | **70** | **113** | - | **89** |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | | **70** | **64** | - | **76** |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | | **65** | **51** | - | **63** |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | | **67** | **49** | - | **61** |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | | **60** | **50** | - | **54** |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | | **56** | **45** | - | **50** |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | | **64** | **70** | - | **66** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME321066.013<br>Water<br>11 Jun 2021<br>SE220737.013 | ME321066.014<br>Water<br>11 Jun 2021<br>SE220737.014 | ME321066.015<br>Soil<br>11 Jun 2021<br>SE220737.015 | ME321066.016<br>Water<br>11 Jun 2021<br>SE220737.016 |
|---|---|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level Method: MA-1523 Tested: 17/6/2021 (continued)** | | | | | | |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | **55** | **76** | - | **75** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME321066.017<br>Water<br>11 Jun 2021<br>SE220737.017 | ME321066.018<br>Water<br>11 Jun 2021<br>SE220737.018 |
|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 22/6/2021** | | | | |
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | - | - |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | - | - |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | - | - |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | - | - |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | - | - |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | - | - |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | - | - |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | - | - |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | - | - |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | - | - |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | - | - |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | - | - |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | - | - |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | - | - |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | - | - |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | - | - |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | - | - |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | - | - |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | - | - |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | - | - |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | - | - |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | - | - |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | - | - |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | - | - |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | - | - |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | - | - |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | - | - |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | - | - |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | - | - |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | - | - |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | - | - |
| Total of PFAS (n=30) | mg/kg | 0.08 | - | - |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | - | - |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | - | - |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | - | - |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | - | - |

**Moisture Content Method: AN002 Tested: 21/6/2021**

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME321066.017<br>Water<br>11 Jun 2021<br>SE220737.017 | ME321066.018<br>Water<br>11 Jun 2021<br>SE220737.018 |
|---|---|---|---|---|
| **Moisture Content Method: AN002 Tested: 21/6/2021 (continued)** | | | | |
| % Moisture* | %w/w | 1 | - | - |
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level Method: MA-1523 Tested: 17/6/2021** | | | | |
| Perfluorobutanoic acid (PFBA) | µg/L | 0.0005 | **0.0011** | **0.0013** |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.0005 | **0.0016** | **0.0016** |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.0005 | **0.0010** | **0.0010** |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.0005 | **0.0006** | <0.0005 |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.0005 | **0.0005** | **0.0012** |
| Perfluorononanoic acid (PFNA) | µg/L | 0.001 | <0.001 | <0.001 |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.001 | <0.001 | <0.001 |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.001 | <0.001 | <0.001 |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.001 | <0.001 | <0.001 |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.001 | <0.001 | <0.001 |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.001 | <0.001 | <0.001 |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.002 | <0.002 | <0.002 |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.001 | <0.001 | <0.001 |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.001 | <0.001 | <0.001 |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.0002 | **0.0017** | **0.0014** |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.0002 | <0.0002 | <0.0002 |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.0002 | **0.0017** | **0.0018** |
| Sum of PFHxS and PFOS | µg/L | 0.0002 | **0.0034** | **0.0033** |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.0005 | <0.0005 | <0.0005 |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.0005 | <0.0005 | <0.0005 |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.002 | <0.002 | <0.002 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.0025 | <0.0025 | <0.0025 |
| Total PFAS (n=30) | µg/L | 0.006 | **0.0082** | **0.0083** |
| (13C4-PFBA) Isotopically Labelled Internal Recovery | % | - | **100** | **100** |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery | % | - | **77** | **76** |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery | % | - | **57** | **59** |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery | % | - | **79** | **92** |
| (13C4_PFOA) Isotopically Labelled Internal Recovery | % | - | **101** | **103** |
| (13C9-PFNA) Isotopically Labelled Internal Recovery | % | - | **95** | **92** |
| (13C6-PFDA) Isotopically Labelled Internal Recovery | % | - | **98** | **87** |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery | % | - | **96** | **95** |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery | % | - | **90** | **80** |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery | % | - | **91** | **86** |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery | % | - | **116** | **111** |
| (13C3-PFBS) Isotopically Labelled Internal Recovery | % | - | **51** | **58** |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery | % | - | **113** | **102** |
| (13C8-PFOS) Isotopically Labelled Internal Recovery | % | - | **108** | **96** |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery | % | - | **45** | **49** |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery | % | - | **92** | **95** |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery | % | - | **80** | **84** |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery | % | - | **69** | **62** |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery | % | - | **63** | **70** |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery | % | - | **65** | **63** |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery | % | - | **51** | **49** |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery | % | - | **48** | **51** |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery | % | - | **55** | **61** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>ME321066.017<br>Water<br>11 Jun 2021<br>SE220737.017 | ME321066.018<br>Water<br>11 Jun 2021<br>SE220737.018 |
|---|---|---|---|---|
| **Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level Method: MA-1523 Tested: 17/6/2021 (continued)** | | | | |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery | % | - | 71 | 59 |

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.

**Moisture Content Method: ME-(AU)-[ENV]AN002**

| Parameter | QC Reference | Units | LOR | DUP %RPD |
|---|---|---|---|---|
| % Moisture* | LB042204 | %w/w | 1 | 3% |

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level Method: MA-1523**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | LB042185 | µg/L | 0.0005 | <0.0005 | 0% | NA |
| Perfluoropentanoic acid (PFPeA) | LB042185 | µg/L | 0.0005 | <0.0005 | 1% | NA |
| Perfluorohexanoic acid (PFHxA) | LB042185 | µg/L | 0.0005 | <0.0005 | 4% | NA |
| Perfluoroheptanoic acid (PFHpA) | LB042185 | µg/L | 0.0005 | <0.0005 | 1% | 97% |
| Perfluorooctanoic Acid (PFOA) | LB042185 | µg/L | 0.0005 | <0.0005 | 7% | 111% |
| Perfluorononanoic acid (PFNA) | LB042185 | µg/L | 0.001 | <0.001 | 0% | 150% |
| Perfluorodecanoic acid (PFDA) | LB042185 | µg/L | 0.001 | <0.001 | 0% | 98% |
| Perfluoroundecanoic acid (PFUnA) | LB042185 | µg/L | 0.001 | <0.001 | 0% | 148% |
| Perfluorododecanoic acid (PFDoA) | LB042185 | µg/L | 0.001 | <0.001 | 0% | 128% |
| Perfluorotridecanoic acid (PFTrDA) | LB042185 | µg/L | 0.001 | <0.001 | 0% | 112% |
| Perfluorotetradecanoic acid (PFTeDA) | LB042185 | µg/L | 0.001 | <0.001 | 0% | 150% |
| Perfluorohexadecanoic acid (PFHxDA) | LB042185 | µg/L | 0.002 | <0.002 | 0% | NA |
| Perfluorobutane sulfonate (PFBS) | LB042185 | µg/L | 0.001 | <0.001 | 11% | NA |
| Perfluoropentane sulfonate (PFPeS) | LB042185 | µg/L | 0.001 | <0.001 | 1% | NA |
| Perfluorohexane sulfonate (PFHxS) | LB042185 | µg/L | 0.0002 | <0.0002 | 4% | NA |
| Perfluoroheptane sulfonate (PFHpS) | LB042185 | µg/L | 0.0002 | <0.0002 | 14% | NA |
| Perfluorooctane sulfonate (PFOS) | LB042185 | µg/L | 0.0002 | <0.0002 | 1% | 121% |
| Sum of PFHxS and PFOS | LB042185 | µg/L | 0.0002 | <0.0002 | 4% | NA |
| Perfluorononane sulfonate (PFNS) | LB042185 | µg/L | 0.0005 | <0.0005 | 0% | NA |
| Perfluorodecane sulfonate (PFDS) | LB042185 | µg/L | 0.0005 | <0.0005 | 0% | NA |
| Perfluorododecane sulfonate (PFDoS) | LB042185 | µg/L | 0.0005 | <0.0005 | 0% | NA |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | LB042185 | µg/L | 0.0005 | <0.0005 | 0% | NA |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | LB042185 | µg/L | 0.0005 | <0.0005 | 0% | NA |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | LB042185 | µg/L | 0.0005 | <0.0005 | 0% | NA |
| Perfluorooctane sulfonamide (PFOSA) | LB042185 | µg/L | 0.002 | <0.002 | 0% | 70% |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | LB042185 | µg/L | 0.0025 | <0.0025 | 0% | NA |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | LB042185 | µg/L | 0.0025 | <0.0025 | 0% | NA |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol (N-MeFOSE) | LB042185 | µg/L | 0.0025 | <0.0025 | 0% | NA |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol (N-EtFOSE) | LB042185 | µg/L | 0.0025 | <0.0025 | 0% | NA |
| N-Methylperfluorooctanesulfonamidoacetic acid (N_MeFOSAA) | LB042185 | µg/L | 0.0025 | <0.0025 | 0% | NA |
| N-Ethylperfluorooctanesulfonamidoacetic Acid (N-EtFOSAA) | LB042185 | µg/L | 0.0025 | <0.0025 | 0% | NA |
| Total PFAS (n=30) | LB042185 | µg/L | 0.006 | <0.0060 | | |
| (13C4-PFBA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 98% | 3% | 100% |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 74% | 1% | 79% |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 66% | 4% | 77% |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 81% | 1% | 97% |
| (13C4_PFOA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 97% | 2% | 99% |
| (13C9-PFNA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 106% | 7% | 114% |
| (13C6-PFDA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 113% | 4% | 117% |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 89% | 7% | 89% |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 96% | 13% | 100% |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 97% | 13% | 94% |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 100% | 1% | 76% |
| (13C3-PFBS) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 70% | 2% | 74% |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 125% | 0% | 109% |
| (13C8-PFOS) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 87% | 1% | 126% |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 95% | 2% | 96% |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 143% | 1% | 127% |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 98% | 21% | 100% |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 65% | 14% | 93% |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 67% | 26% | 83% |

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.

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level Method: MA-1523 (continued)**

| | | | | MB | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|---|
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 69% | 14% | 71% |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 60% | 14% | 91% |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 54% | 23% | 84% |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 83% | 6% | 87% |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard | LB042185 | % | - | 82% | 3% | 111% |

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.

**Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluoropentanoic acid (PFPeA) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorohexanoic acid (PFHxA) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluoroheptanoic acid (PFHpA) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | 135% |
| Perfluorooctanoic Acid (PFOA) | LB042203 | mg/kg | 0.0008 | <0.0008 | 0% | 148% |
| Perfluorononanoic acid (PFNA) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | 141% |
| Perfluorodecanoic acid (PFDA) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | 148% |
| Perfluoroundecanoic acid (PFUnA) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | 134% |
| Perfluorododecanoic acid (PFDoA) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | 148% |
| Perfluorotridecanoic acid (PFTrDA) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | 147% |
| Perfluorotetradecanoic acid (PFTeDA) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorohexadecanoic acid (PFHxDA) | LB042203 | mg/kg | 0.0032 | <0.0032 | 0% | NA |
| Perfluorobutane sulfonate (PFBS) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluoropentane sulfonate (PFPeS) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorohexane sulfonate (PFHxS) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluoroheptane sulfonate (PFHpS) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorooctane sulfonate (PFOS) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | 110% |
| Sum PFOS and PFHXS | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorononane sulfonate (PFNS) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorodecane sulfonate (PFDS) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorododecane sulfonate (PFDoS) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | NA |
| Perfluorooctane sulfonamide (PFOSA) | LB042203 | mg/kg | 0.0016 | <0.0016 | 0% | 81% |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | LB042203 | mg/kg | 0.008 | <0.008 | 0% | NA |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | LB042203 | mg/kg | 0.008 | <0.008 | 0% | NA |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol (N-MeFOSE) | LB042203 | mg/kg | 0.016 | <0.016 | 0% | NA |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol (N-EtFOSE) | LB042203 | mg/kg | 0.016 | <0.016 | 0% | NA |
| N-Methylperfluorooctanesulfonamidoacetic acid (N_MeFOSAA) | LB042203 | mg/kg | 0.008 | <0.008 | 0% | NA |
| N-Ethylperfluorooctanesulfonamidoacetic Acid (N-EtFOSAA) | LB042203 | mg/kg | 0.008 | <0.008 | 0% | NA |
| Total of PFAS (n=30) | LB042203 | mg/kg | 0.08 | <0.08 | 0% | NA |
| (13C4-PFBA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 97% | 4% | 101% |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 94% | 2% | 104% |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 107% | 1% | 92% |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 109% | 0% | 94% |
| (13C4_PFOA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 112% | 11% | 103% |
| (13C9-PFNA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 100% | 0% | 103% |
| (13C6-PFDA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 87% | 18% | 97% |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 102% | 18% | 109% |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 98% | 7% | 103% |
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 57% | 20% | 82% |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 21% | 57% | 63% |
| (13C3-PFBS) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 87% | 3% | 81% |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 89% | 6% | 98% |
| (13C8-PFOS) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 99% | 2% | 101% |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 85% | 6% | 80% |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 80% | 9% | 73% |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 88% | 1% | 75% |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 59% | 10% | 61% |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 42% | 0% | 45% |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 35% | 5% | 41% |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 53% | 4% | 52% |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 43% | 2% | 47% |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 62% | 11% | 62% |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard | LB042203 | % | - | 67% | 11% | 65% |

| 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-1523 | This method covers the analysis of per- and polyfluoroalkyl substances ( PFAS) in aqueous, solid and biosolid samples and solvent extracts, determined as the total of linear and branched isomers. After spiking with isotopically labelled quantification surrogates and clean-up via SPE cartridges sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification. |

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 |
| | | QFL | QC result is below the lower tolerance |
| ** | Indicative data, theoretical holding time exceeded. | - | The sample was not analysed for this analyte |
| *** | Indicates that both * and ** apply. | 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 calcuated 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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

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# CHAIN OF CUSTODY & ANALYSIS REQUEST

**SGS Environmental Services Sydney**
**Unit 16, 33 Maddox Street**
**Alexandria NSW 2015**
**Facsimile No: (02) 85940499**
**Telephone No: (02) 85940400**
**Email:**
**au.samplereceipt.sydney@sgs.com**

**Sample Date:** 6-7/04/2020

| | | | |
|---|---|---|---|
| Company Name: | JM Environments | Project Name/No: | JME2020 |
| Address: | 37 Tooke St | Purchase Order No: | JME2020 |
| | COOKS HILL NSW 2300 | Results Required By: | Standard |
| Contact Name: | James McMahon | Email: | james@jmenvironments.com |
| Telephone | 0427 893 668 | Email: | johnh@jmjenvironments.com |

| | | | |
|---|---|---|---|
| Relinquished by: J McMahon | Date /Time: 4pm 8/4/2020 | Received by: TNT | Date /Time: 4pm 8/4/2020 |
| Relinquished by: | Date /Time: | Received by: | Date /Time: |
| Samples intact: Yes/No | Temperature: | Sample Cooler Sealed: Yes/No | Laboratory Quotation: ENVI126319 |

| Lab Sample ID | Sample ID | Water | Soil | Other | Preservative | No. of Containers | | pH/CEC | CL10 | CL15 | CL18 | CL2 | BTEX | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | QC1 | | x | | | | | | x | | | | | | | | | | **sampled 6/4/2020** |
| 1 | QC1A | | x | | | | | | x | | | | | | | | | | **Send to ALS sampled 6/4/2020** |
| | QC2 | | x | | | | | | x | | | | | | | | | | **sampled 6/4/2020** |
| 2 | QC2A | | x | | | | | | x | | | | | | | | | | **Send to ALS sampled 6/4/2020** |
| | QC3 | | x | | | | | | | | | | | | | | | | **Hold sampled 6/4/2020** |
| 3 | QC3A | | x | | | | | | | | | | | | | | | | **Hold sampled 6/4/2020** |
| | Trip Blank | | x | | | | | | | | | | x | | | | | | |
| | Trip Spike | | x | | | | | | | | | | x | | | | | | |
| | QCA | x | | | | | | | | | | x | | | | | | | |

Received - ME ALS 14/4/2020 1:50pm

Environmental Division
Sydney
Work Order Reference
ES2012625

Telephone : +61-2-8784 8555

# SAMPLE RECEIPT NOTIFICATION (SRN)

**Work Order** : **ES2012625**

| | | | |
|---|---|---|---|
| Client | : **JM ENVIRONMENTS** | Laboratory | : Environmental Division Sydney |
| Contact | : MR JAMES MCMAHON | Contact | : Customer Services ES |
| Address | : 37 TOOKE STREET<br>COOKS HILL NSW 2300 | Address | : 277-289 Woodpark Road Smithfield<br>NSW Australia 2164 |
| E-mail | : james@jmenvironments.com | E-mail | : ALSEnviro.Sydney@ALSGlobal.com |
| Telephone | : ---- | Telephone | : +61-2-8784 8555 |
| Facsimile | : ---- | Facsimile | : +61-2-8784 8500 |
| Project | : JME2020 | Page | : 1 of 2 |
| Order number | : JME2020 | Quote number | : ES2017JMENVIRO0001<br>(SYBQ/292/17) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : ---- | | |
| Sampler | : | | |

## Dates

| | | | |
|---|---|---|---|
| Date Samples Received | : 14-Apr-2020 13:50 | Issue Date | : 15-Apr-2020 |
| Client Requested Due Date | : 20-Apr-2020 | Scheduled Reporting Date | : **20-Apr-2020** |

## Delivery Details

| | | | |
|---|---|---|---|
| Mode of Delivery | : Carrier | Security Seal | : Not Available |
| No. of coolers/boxes | : 1 | Temperature | : 12.3 - Ice Bricks present |
| Receipt Detail | : | No. of samples received / analysed | : 2 / 2 |

## General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

## Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | SOIL - EA055-103 Moisture Content | SOIL - S-26 8 metals/TRH/BTEXN/PAH |
|---|---|---|---|---|
| ES2012625-001 | 06-Apr-2020 00:00 | QC1A | ✓ | ✓ |
| ES2012625-002 | 06-Apr-2020 00:00 | QC2A | ✓ | ✓ |

## Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

## Requested Deliverables

| | | |
|---|---|---|
| **ACCOUNTS PAYABLE** | | |
| - A4 - AU Tax Invoice (INV) | Email | admin@jmenvironments.com |
| **JAMES MCMAHON** | | |
| - *AU Certificate of Analysis - NATA (COA) | Email | james@jmenvironments.com |
| - *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) | Email | james@jmenvironments.com |
| - *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) | Email | james@jmenvironments.com |
| - A4 - AU Sample Receipt Notification - Environmental HT (SRN) | Email | james@jmenvironments.com |
| - Chain of Custody (CoC) (COC) | Email | james@jmenvironments.com |
| - EDI Format - ENMRG (ENMRG) | Email | james@jmenvironments.com |
| - EDI Format - ESDAT (ESDAT) | Email | james@jmenvironments.com |
| **JOHN HOWARD** | | |
| - *AU Certificate of Analysis - NATA (COA) | Email | johnh@jmenvironments.com |
| - *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) | Email | johnh@jmenvironments.com |
| - *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) | Email | johnh@jmenvironments.com |
| - A4 - AU Sample Receipt Notification - Environmental HT (SRN) | Email | johnh@jmenvironments.com |
| - Chain of Custody (CoC) (COC) | Email | johnh@jmenvironments.com |
| - EDI Format - ENMRG (ENMRG) | Email | johnh@jmenvironments.com |
| - EDI Format - ESDAT (ESDAT) | Email | johnh@jmenvironments.com |

ALS Environmental

# CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Work Order** | : **ES2012625** | Page | : 1 of 6 |
| Client | : **JM ENVIRONMENTS** | Laboratory | : Environmental Division Sydney |
| Contact | : MR JAMES MCMAHON | Contact | : Customer Services ES |
| Address | : 37 TOOKE STREET<br>COOKS HILL NSW 2300 | Address | : 277-289 Woodpark Road Smithfield NSW Australia 2164 |
| Telephone | : ---- | Telephone | : +61-2-8784 8555 |
| Project | : JME2020 | Date Samples Received | : 14-Apr-2020 13:50 |
| Order number | : JME2020 | Date Analysis Commenced | : 16-Apr-2020 |
| C-O-C number | : ---- | Issue Date | : 20-Apr-2020 14:26 |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : SYBQ/292/17 | | |
| No. of samples received | : 2 | | |
| No. of samples analysed | : 2 | | |

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

## *Signatories*

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

| *Signatories* | *Position* | *Accreditation Category* |
|---|---|---|
| Celine Conceicao | Senior Spectroscopist | Sydney Inorganics, Smithfield, NSW |
| Edwandy Fadjar | Organic Coordinator | Sydney Inorganics, Smithfield, NSW |
| Edwandy Fadjar | Organic Coordinator | Sydney Organics, Smithfield, NSW |
| Ivan Taylor | Analyst | Sydney Inorganics, Smithfield, NSW |

## General Comments

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

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

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

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

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

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

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

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.

## Analytical Results

| Sub-Matrix: SOIL (Matrix: SOIL) | | | Client sample ID | QC1A | QC2A | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|
| | | | Client sampling date / time | 06-Apr-2020 00:00 | 06-Apr-2020 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | ES2012625-001 | ES2012625-002 | ------- | ------- | ------- |
| | | | | Result | Result | ---- | ---- | ---- |
| **EA055: Moisture Content (Dried @ 105-110°C)** | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 13.0 | 8.4 | ---- | ---- | ---- |
| **EG005(ED093)T: Total Metals by ICP-AES** | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 166 | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 3 | ---- | ---- | ---- |
| Chromium | 7440-47-3 | 2 | mg/kg | 4 | 56 | ---- | ---- | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | 12 | 2720 | ---- | ---- | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | 8 | 4560 | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | 4 | 6 | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | 252 | 42600 | ---- | ---- | ---- |
| **EG035T: Total Recoverable Mercury by FIMS** | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | ---- | ---- | ---- |
| **EP075(SIM)B: Polynuclear Aromatic Hydrocarbons** | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | 0.6 | 0.6 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | 1.2 | 1.2 | ---- | ---- | ---- |
| **EP080/071: Total Petroleum Hydrocarbons** | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: SOIL (Matrix: SOIL) | | | | Client sample ID | QC1A | QC2A | --- | --- | --- |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Client sampling date / time | 06-Apr-2020 00:00 | 06-Apr-2020 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | ES2012625-001 | ES2012625-002 | ------- | ------- | ------- |
| | | | | | Result | Result | ---- | ---- | ---- |
| **EP080/071: Total Petroleum Hydrocarbons - Continued** | | | | | | | | | |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | <100 | <100 | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | <100 | <100 | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| **EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions** | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | <10 | ---- | ---- | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | <10 | ---- | ---- | ---- |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | <100 | <100 | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | <100 | <100 | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| **EP080: BTEXN** | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Sum of BTEX | ---- | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| **EP075(SIM)S: Phenolic Compound Surrogates** | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.5 | % | | **82.8** | **79.9** | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.5 | % | | **87.3** | **86.9** | ---- | ---- | ---- |
| 2.4.6-Tribromophenol | 118-79-6 | 0.5 | % | | **83.6** | **80.8** | ---- | ---- | ---- |
| **EP075(SIM)T: PAH Surrogates** | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 0.5 | % | | **107** | **107** | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.5 | % | | **114** | **113** | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.5 | % | | **97.0** | **96.6** | ---- | ---- | ---- |
| **EP080S: TPH(V)/BTEX Surrogates** | | | | | | | | | |
| 1.2-Dichloroethane-D4 | 17060-07-0 | 0.2 | % | | **94.8** | **89.9** | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.2 | % | | **99.6** | **94.9** | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: **SOIL** (Matrix: **SOIL**) | | | | Client sample ID | QC1A | QC2A | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Client sampling date / time | 06-Apr-2020 00:00 | 06-Apr-2020 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | ES2012625-001 | ES2012625-002 | ------- | ------- | ------- |
| | | | | | Result | Result | ---- | ---- | ---- |
| **EP080S: TPH(V)/BTEX Surrogates - Continued** | | | | | | | | | |
| **4-Bromofluorobenzene** | 460-00-4 | 0.2 | % | | **108** | **102** | ---- | ---- | ---- |

## Surrogate Control Limits

| Sub-Matrix: **SOIL** | | Recovery Limits (%) | |
|---|---|---|---|
| *Compound* | *CAS Number* | *Low* | *High* |
| **EP075(SIM)S: Phenolic Compound Surrogates** | | | |
| **Phenol-d6** | 13127-88-3 | 63 | 123 |
| **2-Chlorophenol-D4** | 93951-73-6 | 66 | 122 |
| **2.4.6-Tribromophenol** | 118-79-6 | 40 | 138 |
| **EP075(SIM)T: PAH Surrogates** | | | |
| **2-Fluorobiphenyl** | 321-60-8 | 70 | 122 |
| **Anthracene-d10** | 1719-06-8 | 66 | 128 |
| **4-Terphenyl-d14** | 1718-51-0 | 65 | 129 |
| **EP080S: TPH(V)/BTEX Surrogates** | | | |
| **1.2-Dichloroethane-D4** | 17060-07-0 | 73 | 133 |
| **Toluene-D8** | 2037-26-5 | 74 | 132 |
| **4-Bromofluorobenzene** | 460-00-4 | 72 | 130 |

ALS Environmental

# QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|---|---|---|---|
| **Work Order** | : **ES2012625** | Page | : 1 of 4 |
| Client | : **JM ENVIRONMENTS** | Laboratory | : Environmental Division Sydney |
| Contact | : MR JAMES MCMAHON | Telephone | : +61-2-8784 8555 |
| Project | : JME2020 | Date Samples Received | : 14-Apr-2020 |
| Site | : ---- | Issue Date | : 20-Apr-2020 |
| Sampler | : ---- | No. of samples received | : 2 |
| Order number | : JME2020 | No. of samples analysed | : 2 |

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

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

## *Summary of Outliers*

### *Outliers : Quality Control Samples*

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

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

### *Outliers : Analysis Holding Time Compliance*

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

### *Outliers : Frequency of Quality Control Samples*

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

## Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

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

| Method / Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|---|---|---|---|---|---|---|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| **EA055: Moisture Content (Dried @ 105-110°C)** | | | | | | | |
| **Soil Glass Jar - Unpreserved (EA055)** | | | | | | | |
| QC1A, QC2A | **06-Apr-2020** | **----** | ---- | ---- | **16-Apr-2020** | 20-Apr-2020 | ✓ |
| **EG005(ED093)T: Total Metals by ICP-AES** | | | | | | | |
| **Soil Glass Jar - Unpreserved (EG005T)** | | | | | | | |
| QC1A, QC2A | **06-Apr-2020** | **16-Apr-2020** | 03-Oct-2020 | ✓ | **16-Apr-2020** | 03-Oct-2020 | ✓ |
| **EG035T: Total Recoverable Mercury by FIMS** | | | | | | | |
| **Soil Glass Jar - Unpreserved (EG035T)** | | | | | | | |
| QC1A, QC2A | **06-Apr-2020** | **16-Apr-2020** | 04-May-2020 | ✓ | **16-Apr-2020** | 04-May-2020 | ✓ |
| **EP075(SIM)B: Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| **Soil Glass Jar - Unpreserved (EP075(SIM))** | | | | | | | |
| QC1A, QC2A | **06-Apr-2020** | **16-Apr-2020** | 20-Apr-2020 | ✓ | **16-Apr-2020** | 26-May-2020 | ✓ |
| **EP080/071: Total Petroleum Hydrocarbons** | | | | | | | |
| **Soil Glass Jar - Unpreserved (EP080)** | | | | | | | |
| QC1A, QC2A | **06-Apr-2020** | **16-Apr-2020** | 20-Apr-2020 | ✓ | **16-Apr-2020** | 20-Apr-2020 | ✓ |
| **EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions** | | | | | | | |
| **Soil Glass Jar - Unpreserved (EP080)** | | | | | | | |
| QC1A, QC2A | **06-Apr-2020** | **16-Apr-2020** | 20-Apr-2020 | ✓ | **16-Apr-2020** | 20-Apr-2020 | ✓ |
| **EP080: BTEXN** | | | | | | | |
| **Soil Glass Jar - Unpreserved (EP080)** | | | | | | | |
| QC1A, QC2A | **06-Apr-2020** | **16-Apr-2020** | 20-Apr-2020 | ✓ | **16-Apr-2020** | 20-Apr-2020 | ✓ |

## Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|---|---|---|---|---|---|---|
| *Analytical Methods* | *Method* | *QC* | *Regular* | ***Actual*** | ***Expected*** | *Evaluation* | |
| **Laboratory Duplicates (DUP)** | | | | | | | |
| Moisture Content | EA055 | 2 | 16 | **12.50** | **10.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (SIM) | EP075(SIM) | 1 | 6 | **16.67** | **10.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 13 | **15.38** | **10.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 16 | **12.50** | **10.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 8 | **12.50** | **10.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 20 | **10.00** | **10.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| **Laboratory Control Samples (LCS)** | | | | | | | |
| PAH/Phenols (SIM) | EP075(SIM) | 1 | 6 | **16.67** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 13 | **7.69** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 16 | **6.25** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 8 | **12.50** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | **5.00** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| **Method Blanks (MB)** | | | | | | | |
| PAH/Phenols (SIM) | EP075(SIM) | 1 | 6 | **16.67** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 13 | **7.69** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 16 | **6.25** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 8 | **12.50** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | **5.00** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| **Matrix Spikes (MS)** | | | | | | | |
| PAH/Phenols (SIM) | EP075(SIM) | 1 | 6 | **16.67** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 13 | **7.69** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 16 | **6.25** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 8 | **12.50** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | **5.00** | **5.00** | ✓ | NEPM 2013 B3 & ALS QC Standard |

## Brief Method Summaries

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

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|---|---|---|
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 6.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013. |
| PAH/Phenols (SIM) | EP075(SIM) | SOIL | In house: Referenced to USEPA SW 846 - 8270E. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507) |
| TRH Volatiles/BTEX | EP080 | SOIL | In house: Referenced to USEPA SW 846 - 8260D. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013. |

| Preparation Methods | Method | Matrix | Method Descriptions |
|---|---|---|---|
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils for Purge and Trap | ORG16 | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids | ORG17 | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |

# QUALITY CONTROL REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **ES2012625** | Page | : 1 of 7 |
| Client | : **JM ENVIRONMENTS** | Laboratory | : Environmental Division Sydney |
| Contact | : MR JAMES MCMAHON | Contact | : Customer Services ES |
| Address | : 37 TOOKE STREET<br>COOKS HILL NSW 2300 | Address | : 277-289 Woodpark Road Smithfield NSW Australia 2164 |
| Telephone | : ---- | Telephone | : +61-2-8784 8555 |
| Project | : JME2020 | Date Samples Received | : 14-Apr-2020 |
| Order number | : JME2020 | Date Analysis Commenced | : 16-Apr-2020 |
| C-O-C number | : ---- | Issue Date | : 20-Apr-2020 |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : SYBQ/292/17 | | |
| No. of samples received | : 2 | | |
| No. of samples analysed | : 2 | | |

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

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

This Quality Control Report contains the following information:

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

## *Signatories*

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

| *Signatories* | *Position* | *Accreditation Category* |
|---|---|---|
| Celine Conceicao | Senior Spectroscopist | Sydney Inorganics, Smithfield, NSW |
| Edwandy Fadjar | Organic Coordinator | Sydney Inorganics, Smithfield, NSW |
| Edwandy Fadjar | Organic Coordinator | Sydney Organics, Smithfield, NSW |
| Ivan Taylor | Analyst | Sydney Inorganics, Smithfield, NSW |

## General Comments

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

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

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

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

## Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Laboratory sample ID* | *Client sample ID* | *Method: Compound* | *CAS Number* | *LOR* | *Unit* | *Original Result* | *Duplicate Result* | *RPD (%)* | *Recovery Limits (%)* |
| **EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2970228)** | | | | | | | | | |
| ES2012521-002 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Chromium | 7440-47-3 | 2 | mg/kg | 59 | 57 | 3.27 | 0% - 20% |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 11 | 5 | 75.3 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 10 | 7 | 43.4 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 17 | 11 | 46.6 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 7 | 6 | 17.6 | No Limit |
| EB2010021-014 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Chromium | 7440-47-3 | 2 | mg/kg | 6 | 5 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 3 | 3 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 12 | 12 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 19 | 17 | 10.6 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 193 | 233 | 18.9 | 0% - 20% |
| **EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2970230)** | | | | | | | | | |
| ES2012472-002 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 14.7 | 15.1 | 2.94 | 0% - 50% |
| ES2012625-001 | QC1A | EA055: Moisture Content | ---- | 0.1 | % | 13.0 | 13.9 | 6.40 | 0% - 50% |
| **EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2970229)** | | | | | | | | | |
| ES2012625-001 | QC1A | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EB2010021-014 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| **EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2969441)** | | | | | | | | | |
| ES2012474-002 | Anonymous | EP075(SIM): Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |

Sub-Matrix: **SOIL**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Laboratory sample ID* | *Client sample ID* | *Method: Compound* | *CAS Number* | *LOR* | *Unit* | *Original Result* | *Duplicate Result* | *RPD (%)* | *Recovery Limits (%)* |
| **EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2969441) - continued** | | | | | | | | | |
| ES2012474-002 | Anonymous | EP075(SIM): Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2<br>205-82-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| **EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2969439)** | | | | | | | | | |
| ES2012474-002 | Anonymous | EP071: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| **EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2970078)** | | | | | | | | | |
| ES2012353-001 | Anonymous | EP080: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| ES2012472-001 | Anonymous | EP080: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| **EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2969439)** | | | | | | | | | |
| ES2012474-002 | Anonymous | EP071: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| **EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2970078)** | | | | | | | | | |
| ES2012353-001 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| ES2012472-001 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| **EP080: BTEXN (QC Lot: 2970078)** | | | | | | | | | |
| ES2012353-001 | Anonymous | EP080: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3<br>106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |

Sub-Matrix: **SOIL**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Laboratory sample ID* | *Client sample ID* | *Method: Compound* | *CAS Number* | *LOR* | *Unit* | *Original Result* | *Duplicate Result* | *RPD (%)* | *Recovery Limits (%)* |
| **EP080: BTEXN (QC Lot: 2970078) - continued** | | | | | | | | | |
| ES2012472-001 | Anonymous | EP080: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3<br>106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |

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

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

Sub-Matrix: **SOIL**

| | | | | Method Blank (MB) Report | Laboratory Control Spike (LCS) Report | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | Concentration | LCS | Low | High |
| **EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2970228)** | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 98.3 | 86.0 | 126 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 91.7 | 83.0 | 113 |
| EG005T: Chromium | 7440-47-3 | 2 | mg/kg | <2 | 43.9 mg/kg | 77.3 | 76.0 | 128 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 91.6 | 86.0 | 120 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 90.3 | 80.0 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 90.2 | 87.0 | 123 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 92.9 | 80.0 | 122 |
| **EG035T: Total Recoverable Mercury by FIMS (QCLot: 2970229)** | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 76.7 | 70.0 | 105 |
| **EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2969441)** | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 103 | 77.0 | 125 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 106 | 72.0 | 124 |
| EP075(SIM): Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 105 | 73.0 | 127 |
| EP075(SIM): Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 107 | 72.0 | 126 |
| EP075(SIM): Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 105 | 75.0 | 127 |
| EP075(SIM): Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 107 | 77.0 | 127 |
| EP075(SIM): Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 112 | 73.0 | 127 |
| EP075(SIM): Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 109 | 74.0 | 128 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 93.9 | 69.0 | 123 |
| EP075(SIM): Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 96.0 | 75.0 | 127 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2<br>205-82-3 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 90.4 | 68.0 | 116 |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 101 | 74.0 | 126 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 98.1 | 70.0 | 126 |
| EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 83.8 | 61.0 | 121 |
| EP075(SIM): Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 80.8 | 62.0 | 118 |
| EP075(SIM): Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 6 mg/kg | 74.2 | 63.0 | 121 |
| **EP080/071: Total Petroleum Hydrocarbons (QCLot: 2969439)** | | | | | | | | |
| EP071: C10 - C14 Fraction | --- | 50 | mg/kg | <50 | 300 mg/kg | 109 | 75.0 | 129 |
| EP071: C15 - C28 Fraction | --- | 100 | mg/kg | <100 | 450 mg/kg | 94.4 | 77.0 | 131 |
| EP071: C29 - C36 Fraction | --- | 100 | mg/kg | <100 | 300 mg/kg | 92.1 | 71.0 | 129 |
| **EP080/071: Total Petroleum Hydrocarbons (QCLot: 2970078)** | | | | | | | | |
| EP080: C6 - C9 Fraction | --- | 10 | mg/kg | <10 | 26 mg/kg | 93.4 | 68.4 | 128 |
| **EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2969439)** | | | | | | | | |

Sub-Matrix: **SOIL**

| Method: Compound | CAS Number | LOR | Unit | Method Blank (MB) Report: Result | Laboratory Control Spike (LCS) Report: Spike Concentration | Spike Recovery (%): LCS | Recovery Limits (%): Low | Recovery Limits (%): High |
|---|---|---|---|---|---|---|---|---|
| **EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2969439) - continued** | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 375 mg/kg | 97.8 | 77.0 | 125 |
| EP071: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 525 mg/kg | 94.3 | 74.0 | 138 |
| EP071: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 225 mg/kg | 79.5 | 63.0 | 131 |
| **EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2970078)** | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 31 mg/kg | 95.4 | 68.4 | 128 |
| **EP080: BTEXN (QCLot: 2970078)** | | | | | | | | |
| EP080: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 1 mg/kg | 84.7 | 62.0 | 116 |
| EP080: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 1 mg/kg | 92.5 | 67.0 | 121 |
| EP080: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 1 mg/kg | 95.0 | 65.0 | 117 |
| EP080: meta- & para-Xylene | 108-38-3<br>106-42-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 98.6 | 66.0 | 118 |
| EP080: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 1 mg/kg | 98.1 | 68.0 | 120 |
| EP080: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 1 mg/kg | 84.9 | 63.0 | 119 |

## Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Matrix Spike (MS) Report: Spike Concentration | SpikeRecovery(%): MS | Recovery Limits (%): Low | Recovery Limits (%): High |
|---|---|---|---|---|---|---|---|
| **EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2970228)** | | | | | | | |
| EB2010021-014 | Anonymous | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 94.8 | 70.0 | 130 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 93.8 | 70.0 | 130 |
| | | EG005T: Chromium | 7440-47-3 | 50 mg/kg | 94.3 | 70.0 | 130 |
| | | EG005T: Copper | 7440-50-8 | 250 mg/kg | 95.2 | 70.0 | 130 |
| | | EG005T: Lead | 7439-92-1 | 250 mg/kg | 93.8 | 70.0 | 130 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 95.0 | 70.0 | 130 |
| | | EG005T: Zinc | 7440-66-6 | 250 mg/kg | 80.9 | 70.0 | 130 |
| **EG035T: Total Recoverable Mercury by FIMS (QCLot: 2970229)** | | | | | | | |
| EB2010021-014 | Anonymous | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 89.0 | 70.0 | 130 |
| **EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2969441)** | | | | | | | |
| ES2012474-002 | Anonymous | EP075(SIM): Acenaphthene | 83-32-9 | 10 mg/kg | 101 | 70.0 | 130 |
| | | EP075(SIM): Pyrene | 129-00-0 | 10 mg/kg | 104 | 70.0 | 130 |
| **EP080/071: Total Petroleum Hydrocarbons (QCLot: 2969439)** | | | | | | | |
| ES2012474-002 | Anonymous | EP071: C10 - C14 Fraction | ---- | 523 mg/kg | 120 | 73.0 | 137 |
| | | EP071: C15 - C28 Fraction | ---- | 2319 mg/kg | 113 | 53.0 | 131 |

Sub-Matrix: **SOIL**

| | | | | Matrix Spike (MS) Report | | | |
|---|---|---|---|---|---|---|---|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| **EP080/071: Total Petroleum Hydrocarbons (QCLot: 2969439) - continued** | | | | | | | |
| ES2012474-002 | Anonymous | EP071: C29 - C36 Fraction | ---- | 1714 mg/kg | 118 | 52.0 | 132 |
| **EP080/071: Total Petroleum Hydrocarbons (QCLot: 2970078)** | | | | | | | |
| ES2012353-001 | Anonymous | EP080: C6 - C9 Fraction | ---- | 32.5 mg/kg | 106 | 70.0 | 130 |
| **EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2969439)** | | | | | | | |
| ES2012474-002 | Anonymous | EP071: >C10 - C16 Fraction | ---- | 860 mg/kg | 126 | 73.0 | 137 |
| | | EP071: >C16 - C34 Fraction | ---- | 3223 mg/kg | 118 | 53.0 | 131 |
| | | EP071: >C34 - C40 Fraction | ---- | 1058 mg/kg | 117 | 52.0 | 132 |
| **EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2970078)** | | | | | | | |
| ES2012353-001 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 37.5 mg/kg | 107 | 70.0 | 130 |
| **EP080: BTEXN (QCLot: 2970078)** | | | | | | | |
| ES2012353-001 | Anonymous | EP080: Benzene | 71-43-2 | 2.5 mg/kg | 86.5 | 70.0 | 130 |
| | | EP080: Toluene | 108-88-3 | 2.5 mg/kg | 91.8 | 70.0 | 130 |
| | | EP080: Ethylbenzene | 100-41-4 | 2.5 mg/kg | 95.3 | 70.0 | 130 |
| | | EP080: meta- & para-Xylene | 108-38-3<br>106-42-3 | 2.5 mg/kg | 97.2 | 70.0 | 130 |
| | | EP080: ortho-Xylene | 95-47-6 | 2.5 mg/kg | 98.1 | 70.0 | 130 |
| | | EP080: Naphthalene | 91-20-3 | 2.5 mg/kg | 80.9 | 70.0 | 130 |

# Appendix G

**MBE2016 Waste Classification Report**
**MBE2017 ENM Assessment Reports**

7 December 2012
Jason Bonney
Kingston Building
PO Box 1906
HRMC NSW 2310

Dear Jason

**RE: WASTE CLASSIFICATION**
**MIDAL CABLES INTERNATIONAL - TOMAGO**

## 1 INTRODUCTION

MB Engineering Solutions Pty Ltd (MBES) was commissioned by Kingston Building Pty Ltd (Kingston) to undertake a waste classification of insitu material at the Midal Cables development site located at McIntyre Rd Tomago (the site) as shown in Figure 1. The site is identified as Lot 5 and 6 DP 270328, part of Lot 301 DP 634536 and part of Lot 3232 DP 618103. It is understood approximately 2000m$^3$ of topsoil and 7,000m$^3$ of subsoil may potentially be excavated and require disposal from site. It is further understood the majority of site has previously been sand mined.

The objective of the work was to provide a waste classification for insitu material at the site that may be excavated during the site development. The following scope of work was undertaken:

- Review of a previous contamination assessments;
- Fieldwork including the collection of test pit samples;
- Laboratory analysis of the collected samples;
- Tabulating of the results of the analysis; and
- Preparation of a waste classification letter report.

## 2 REVIEW OF PREVIOUS ASSESSMENT

### 2.1 GHD Contamination Assessment

The report “Midal Cables International Pty Limited – Phase 2 Contamination Site Assessment – Aluminium Rod and Conductor Manufacturing Facility, Tomago NSW – May 2011” (GHD ref 22/15280/93866 R0) was reviewed and the following information was obtained:

- Acid sulfate soils have a low probability of occurring from 2 m below ground surface;
- The adjacent Tomago aluminium smelter began development in 1974;


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- Site was developed for metal fabrication in the 1980s;
- 23 samples analysed for a suite of 13 heavy metals;
- 9 samples and composites were analysed for Total Petroleum Hydrocarbons/benzene, toluene, ethylbenzene and xylenes (TPH/BTEX) and Polynuclear Aromatic Hydrocarbons (PAH);
- 6 samples were analysed for Organochlorine Pesticides (OCP) and Polychlorinated Biphenyls (PCB); and
- There no exceedances of the commercial/industrial health investigation levels in the samples analysed.

GHD Sampling locations are shown on Figure 2 and the heavy metals data relevant to waste classification is summarised in Summary Table 1. The samples analysed had chemical concentrations or an upper concentration limit (95% confidence) below the general solid waste (CT1) criteria in Table 1 of the NSW Waste Classification Guidelines Part 1 Classifying Waste (Dec 2009).

### 2.2 MBES Acid Sulfate Soil and Groundwater Assessment

MBES conducted a preliminary acid sulfate and groundwater assessment on site at three locations where deeper excavations are planned to occur during the development. Three monitoring wells, MW1-MW3, were installed along the western boundary of site. The boreholes were advanced to 1 m below the proposed depth of excavation in order to assess the acid sulfate soil conditions near each proposed deeper excavation (MW1 3.5m below ground surface (mbgs), MW2 4mbgs, and MW3 6mbgs). Soil samples were collected at 0.5m intervals and analysed for SPOCAS. The boreholes were subsequently converted into monitoring wells. The monitoring wells were sampled for pH and fluoride. The locations of the monitoring wells MW1-MW3 are shown are Figure 2.

Actual acid sulfate was detected at MW3 4-4.5mbgs. No potential or actual acid sulfate soils were detected in the other samples analysed.

Fluoride was detected in MW1 (0.73mg/L), MW2 (0.74mg/L) and MW3 (4.8 mg/L).

## 3 FIELDWORK

Ten test pits were excavated by a MBES environmental scientist with the aid of an excavator supplied by Kingston on 3 December 2012. The test pits were extended through the topsoil/fill to approximately 300mm into the natural underlying sand. The test pits were placed in a grid pattern to give general site coverage and to compliment the sampling locations selected by GHD. Soil sample were collected from each change in lithology. Soil samples were collected from the centre of the excavator bucket using disposable gloves. The gloves were change between each sample collected. The samples were kept on ice awaiting transport to the laboratory. The test locations are shown in Figure 2.

Two QA/QC, QC1 and QC2, samples were collected along with twenty two primary samples.

In addition, two potential asbestos containing materials, WP12 and WP13, were collected.

It was also observed that major earthworks were being conducted at the time of sampling. Numerous large concrete slabs were being excavated from near the centre of site.

## 4 ANALYTICAL SUITE

The selected test pit samples were analysed by SGS for:

- Eight Metals (arsenic, cadmium, chromium, copper, lead, nickel, zinc, and mercury);

- (PAH);
- TPH/BTEX; and
- Fluoride.

WP12 and WP13 were analysed for the presence of asbestos.

## 5 RESULTS AND DISCUSSION

### 5.1 Field Results

Based on a review of the GHD report and test pitting by MBES the site soils are considered to comprise:

- Fill: gravelly, clayed SAND, orange-brown/brown with traces if brick, wood and metal in test pits TP1-TP9 and sandy GRAVEL test pit TP10 from the surface to a depth approximately 0.2-0.3mbgs overlying:
- Topsoil(?)/Fill (not in TP1-3): SAND, fine medium grained dark grey/dark brown from approximately 0.1mbgs (TP9) to approximately 0.7mbgs (TP6 and TP10) overlying;
- SAND: Fine-medium grained, loose, pale brown/yellowy brown/brown.

At test pit TP6 an asphalt/slag/ash pavement was encountered at approximately 0.3.mbgs.

### 5.2 Quality Assurance / Quality Control

Two duplicate samples (QC1 duplicate of TP40.1-0.2 and QC2 duplicate of TP6 0.4-0.5) were analysed. The relative percentage difference of the concentrations of the analytes tested were below the acceptance criterion (<50%).

SGS conducted internal quality control using spikes, laboratory duplicates and method blanks. The laboratory internal quality control testing showed method blank results below the laboratory limit of reporting and spike recoveries within control limits. With the exception of arsenic and zinc which reported spike recoveries of 69% and 705%. The failed arsenic spike recovery was attributed to matrix interference. The failed zinc spike recovery was due to high concentrations of zinc (compared to the spike concentration. These laboratory QA/QC fails are considered not likely to impact on the results. SGS is NATA certified for the analysis undertaken.

Based on review of the QA/QC data, it is considered that the results are likely to be representative of conditions at the sampling locations at the time of sampling and are suitable for a waste classification.

### 5.3 Laboratory Results

The samples analysed had chemical concentrations below the general solid waste (CT1) criteria. Relevant laboratory results are in Summary Table1. No asbestos was identified in the samples analysed.

### 5.4 Waste Classification

#### 5.4.1 Topsoil/Fill

According to NOEH Waste Classification Guidelines the Topsoil/Fill was assessed to be:

- Not a special waste (Step 1);
- Not a liquid waste (Step 2);

- Not a ‘pre-classified, waste (Step 3); and
- Does not possess hazardous characteristics (Step 4).
- **General Solid Waste** (Step 5)

### 5.4.2 Underlying Sand

Based on the laboratory results the underlying sand on site has been slightly impacted by heavy metals and fluoride (TP6 only) to a depth of approximately 0.8mbgs. It is considered likely that sand below the water table is impacted with fluoride and sand at depths of approximately 4-4.5mbgs is likely to be acid sulfate soil.

The NSW NOEH (2009) Waste Classification Guidelines define VENM as “*Virgin excavated natural material means natural material (eg clay, gravel, sand, soil or rock fines) :*

- *That has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities, and*
- *That does not contain sulfidic ores or soils, or any other waste.*

*And includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved from time to time by a notice published in the NSW Government Gazette*.”

Therefore the underlying sand does not meet the definition of VENM and by the same process in Section 5.4.1 the underlying sand to a depth of approximately 4m is classified as **General Solid Waste**.

Acid sulfate soils to be disposed of offsite are required to be handled and treated as per the Acid Sulfate Soil Management Plan developed for the site.

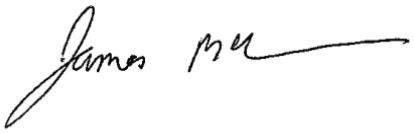
## 6 CONCLUSION

Based on a review of previous results, the field observations and laboratory results the site soils have been impacted as a result of industrial activities hence potential excavated material has been assessed as **General Solid Waste**. The material is required to be disposed to a facility licensed to accept general solid waste.

The findings contained in this report are the result of discrete / specific methodologies used in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general condition of the stockpile sampled. This report has been provided by MBES for the benefit of Kingston Building only.

We trust this meets your requirements at this time. Should you have any questions, please do not hesitate to contact the undersigned.

For and on behalf of MB Engineering Solutions Pty Ltd



**James McMahon**

**Principal Environmental Scientist**

**Attachments**

Figure 1

Figure 2

Summary Table 1

Laboratory Results.


MB Engineering Solutions Pty Ltd
PO Box 775
The Junction NSW 2291
ABN 82 131 293 822




Notes:

1) Basemap Source -Google Earth

2) Subject Site

CLIENT: **Kingston Building**

PROJECT TITLE: **Midal Cables Tomago**

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | MBE2016 | DESIGNED: | | | FIGURE TITLE: **Site Location Plan** |
| DWG #: | 1 | DRAWN: | | | |
| REVISION: | 1 | STATUS: | | | |
| SCALE: | NTS | | | | |
| DATE: | 3/12/12 | | | | FIGURE NUMBER: **1.0** |

MB ENGINEERING SOLUTIONS




Notes:

1) Basemap Source - Google Maps
2) MBES sampling locations
3) GHD sampling locations

CLIENT: **Kingston Building**

PROJECT TITLE: **Midal Cables Tomago**

| | | | | |
|---|---|---|---|---|
| PROJECT: | Landscape'!A | DESIGNED: | | |
| DWG #: | Landscape'!A | DRAWN: | | |
| REVISION: | Landscape'!A | | | |
| SCALE: | | STATUS: | | |
| DATE: | 0 | | | |

FIGURE TITLE: **Sampling Locations**

FIGURE NUMBER: **2.0**

MB ENGINEERING SOLUTIONS

Summary Table
Heavy Metals
Soil Results

Midal Cables Internaltional
Kingston Building

| | | Maximum values of specific contaminant concentration (SCC) for classification without TCLP | | Description | TP5 0.0-0.1 | BH3 0.0-0.1 | BH3 0.2-0.03 | TP7 0.0-0.1 | TP7 0.2-0.3 | BH4 0.0-0.1 | BH4 0.5-0.6 | BH6 0.0-0.1 | TP11 0.0-0.1 | TP8 0.0-0.1 | BH5 0.0-0.1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | GSW | RSW | Sampled By | GHD | GHD | GHD | GHD | GHD | GHD | GHD | GHD | GHD | GHD | GHD |
| Analyte Name | Units | CT1 | CT2 | Reporting Limit | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| Arsenic | mg/kg | 100 | 400 | 5 | <5 | 11 | <5 | 37 | <5 | 6 | <5 | 9 | 17 | 72 | <5 |
| Berylium | mg/kg | 20 | 80 | 1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Cadmium | mg/kg | 20 | 80 | 1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | 2 | <1 | <1 | <1 |
| Chromium | mg/kg | 100 | 400 | 2 | 2 | 26 | <2 | 47 | <2 | 16 | <2 | 70 | 25 | 104 | 17 |
| Lead | mg/kg | 100 | 400 | 5 | <5 | 88 | <5 | 154 | <5 | 99 | <5 | 85 | 27 | 237 | 29 |
| Nickel | mg/kg | 40 | 160 | 2 | <2 | 19 | <2 | 34 | <2 | 10 | <2 | 53 | 24 | 20 | 16 |
| Mercury | mg/kg | 4 | 16 | 0.10 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |

| | | Maximum values of specific contaminant concentration (SCC) for classification without TCLP | | Description | TP12 0.0-0.1 | TP12 0.2-0.3 | TP9 0.0-0.1 | TP2 0.0-0.1 | TP2 0.2-0.3 | TP4 0.2-0.3 | TP6 0.0-0.1 | BH1 0.0-0.1 | BH2 0.0-0.1 | BH2 0.2-0.3 | TP10 0.0-0.1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | GSW | RSW | Sampled By | GHD | GHD | GHD | GHD | GHD | GHD | GHD | GHD | GHD | GHD | GHD |
| Analyte Name | Units | CT1 | CT2 | Reporting Limit | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| Arsenic, As | mg/kg | 100 | 400 | 5 | <5 | <5 | <5 | <5 | <5 | <5 | 5 | 8 | 12 | 12 | 8 |
| Berylium, Be | mg/kg | 20 | 80 | 1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Cadmium, Cd | mg/kg | 20 | 80 | 1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Chromium, Cr | mg/kg | 100 | 400 | 2 | 8 | 2 | 17 | <2 | <2 | <2 | 13 | 48 | 33 | 9 | 131 |
| Lead, Pb | mg/kg | 100 | 400 | 5 | <5 | <5 | 22 | 7 | <5 | <5 | 36 | 108 | 20 | 9 | 113 |
| Nickel, Ni | mg/kg | 40 | 160 | 2 | 8 | <2 | 8 | <2 | <2 | <2 | 30 | 36 | 32 | 19 | 47 |
| Mercury | mg/kg | 4 | 16 | 0.10 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |

| | | Maximum values of specific contaminant concentration (SCC) for classification without TCLP | | Description | TP10 0.2-0.3 | TP1 0.0-0.1 | TP1 0.3-0.4 | TP2 0.1-0.2 | TP2 0.3-0.4 | TP3 0.0-0.2 | TP3 0.3-0.4 | TP4 0.0-0.1 | TP4 0.1-0.2 | TP4 0.2-0.3 | TP5 0.0-0.25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | GSW | RSW | Sampled By | GHD | MBE | MBE | MBE | MBE | MBE | MBE | MBE | MBE | MBE | MBE |
| Analyte Name | Units | CT1 | CT2 | Reporting Limit | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| Arsenic, As | mg/kg | 100 | 400 | 5 | <5 | <3 | <3 | <3 | <3 | <3 | <3 | 11 | <3 | <3 | <3 |
| Berylium, Be | mg/kg | 20 | 80 | 1 | <1 | | | | | | | | | | |
| Cadmium, Cd | mg/kg | 20 | 80 | 1 | <1 | <0.3 | <0.3 | <0.3 | <0.3 | 0 | <0.3 | 0 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 100 | 400 | 2 | 2 | 9 | 2 | 4 | 2 | 23 | 2 | 13 | 12 | 2 | 4 |
| Lead, Pb | mg/kg | 100 | 400 | 5 | <5 | 13 | <1 | 9 | <1 | 43 | <1 | 74 | 14 | <1 | 9 |
| Nickel, Ni | mg/kg | 40 | 160 | 2 | <2 | 9.3 | <0.5 | 3.4 | <0.5 | 8.8 | <0.5 | 8.5 | 0.8 | <0.5 | 1.1 |
| Mercury | mg/kg | 4 | 16 | 0.10 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

Summary Table
Heavy Metals
Soil Results

Midal Cables Internaltional
Kingston Building

| | | Maximum values of specific contaminant concentration (SCC) for classification without TCLP | | Description | TP5 0.3-0.4 | TP6 0.3-0.35 | TP6 0.4-0.5 | TP6 0.7-0.8 | TP7 0.1-0.2 | TP7 0.3-0.4 | TP8 0.1-0.2 | TP8 0.5-0.6 | TP9 0.4-0.5 | TP10 0.1-0.2 | TP10 0.4-0.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | GSW | RSW | Sampled By | MBE | MBE | MBE | MBE | MBE | MBE | MBE | MBE | MBE | MBE | MBE |
| Analyte Name | Units | CT1 | CT2 | Reporting Limit | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| Arsenic, As | mg/kg | 100 | 400 | 5 | <3 | <3 | <3 | <3 | 4 | <3 | 3 | <3 | <3 | 6 | <3 |
| Berylium, Be | mg/kg | 20 | 80 | 1 | NT | | | | | | | | | | |
| Cadmium, Cd | mg/kg | 20 | 80 | 1 | <0.3 | 1 | <0.3 | <0.3 | 1 | <0.3 | <0.3 | <0.3 | <0.3 | 1 | <0.3 |
| Chromium, Cr | mg/kg | 100 | 400 | 2 | 2 | 160 | 3 | 2 | 76 | 1 | 11 | 3 | 2 | 61 | 1 |
| Lead, Pb | mg/kg | 100 | 400 | 5 | 1 | 41 | 4 | <1 | 31 | <1 | 19 | 2 | <1 | 72 | 3 |
| Nickel, Ni | mg/kg | 40 | 160 | 2 | 0.8 | 6.9 | 0.6 | 0.6 | 11.0 | <0.5 | 3.3 | 1.3 | <0.5 | 16.0 | <0.5 |
| Mercury | mg/kg | 4 | 16 | 0.10 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

| | | Maximum values of specific contaminant concentration (SCC) for classification without TCLP | | Description | TP10 0.7-0.8 | UCL 95 |
|---|---|---|---|---|---|---|
| | | GSW | RSW | Sampled By | MBE | |
| Analyte Name | Units | CT1 | CT2 | Reporting Limit | Result | |
| Arsenic, As | mg/kg | 100 | 400 | 5 | <3 | |
| Berylium, Be | mg/kg | 20 | 80 | 1 | | |
| Cadmium, Cd | mg/kg | 20 | 80 | 1 | <0.3 | |
| Chromium, Cr | mg/kg | 100 | 400 | 2 | 2 | |
| Lead, Pb | mg/kg | 100 | 400 | 5 | <1 | 85 |
| Nickel, Ni | mg/kg | 40 | 160 | 2 | <0.5 | 25 |
| Mercury | mg/kg | 4 | 16 | 0.10 | <0.05 | |

# ANALYTICAL REPORT

| CLIENT DETAILS | | LABORATORY DETAILS | |
|---|---|---|---|
| Contact | James McMahon | Manager | Huong Crawford |
| Client | MB Engineering Solutions | Laboratory | SGS Alexandria Environmental |
| Address | 6/56 Industrial Drive<br>Mayfield NSW 2304 | Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | 0427 893 668 | Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 4913 5372 | Facsimile | +61 2 8594 0499 |
| Email | james@mbengineering.com.au | Email | au.environmental.sydney@sgs.com |
| Project | **MBE2016** | SGS Reference | **SE114050 R0** |
| Order Number | **MBE2016** | Report Number | 0000046748 |
| Samples | 26 | Date Reported | 06 Dec 2012 |
| | | Date Received | 04 Dec 2012 |

COMMENTS

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

Asbestos analysed by Approved Identifier Ravee Sivasubramaniam.

SIGNATORIES

Andy Sutton
Organics Chemist

Huong Crawford
Laboratory Manager

Ravee Sivasubramaniam
Hygienist

Snezana Kostoska
Inorganics Chemist

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114050.001<br>Soil<br>03 Dec 2012<br>TP1 0.0-0.1 | SE114050.002<br>Soil<br>03 Dec 2012<br>TP1 0.3-0.4 | SE114050.003<br>Soil<br>03 Dec 2012<br>TP2 0.1-0.2 | SE114050.004<br>Soil<br>03 Dec 2012<br>TP2 0.3-0.4 |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **75** | **78** | **71** | **85** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **79** | **83** | **74** | **91** |
| d8-toluene (Surrogate) | % | - | **72** | **76** | **77** | **82** |
| Bromofluorobenzene (Surrogate) | % | - | **82** | **87** | **75** | **89** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410** | | | | | | |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **75** | **78** | **71** | **85** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **79** | **83** | **74** | **91** |
| d8-toluene (Surrogate) | % | - | **72** | **76** | **77** | **82** |
| Bromofluorobenzene (Surrogate) | % | - | **82** | **87** | **75** | **89** |
| VPH F Bands | | | | | | |
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | <25 | <25 | <25 | <25 |

| Parameter | Units | LOR | Sample Number SE114050.001 Sample Matrix Soil Sample Date 03 Dec 2012 Sample Name TP1 0.0-0.1 | SE114050.002 Soil 03 Dec 2012 TP1 0.3-0.4 | SE114050.003 Soil 03 Dec 2012 TP2 0.1-0.2 | SE114050.004 Soil 03 Dec 2012 TP2 0.3-0.4 |
|---|---|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **116** | **110** | **110** | **108** |
| 2-fluorobiphenyl (Surrogate) | % | - | **102** | **100** | **102** | **100** |
| d14-p-terphenyl (Surrogate) | % | - | **110** | **106** | **106** | **106** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114050.001<br>Soil<br>03 Dec 2012<br>TP1 0.0-0.1 | SE114050.002<br>Soil<br>03 Dec 2012<br>TP1 0.3-0.4 | SE114050.003<br>Soil<br>03 Dec 2012<br>TP2 0.1-0.2 | SE114050.004<br>Soil<br>03 Dec 2012<br>TP2 0.3-0.4 |
|---|---|---|---|---|---|---|---|
| **Total Fluoride in Soil Method: AN142** | | | | | | | |
| Total Fluoride | mg/kg | 40 | | - | - | - | - |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **8.7** | **1.7** | **4.2** | **1.6** |
| Copper, Cu | mg/kg | 0.5 | | **11** | <0.5 | **11** | <0.5 |
| Lead, Pb | mg/kg | 1 | | **13** | <1 | **9** | <1 |
| Nickel, Ni | mg/kg | 0.5 | | **9.3** | <0.5 | **3.4** | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **210** | **1.8** | **130** | **1.6** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Fibre ID in bulk materials Method: AN602** | | | | | | | |
| FibreID | | | | | | | |
| Asbestos Detected | No unit | - | | - | - | - | - |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **5.3** | **6.7** | **5.6** | **8.7** |

| Parameter | Units | LOR | Sample Number SE114050.005 Sample Matrix Soil Sample Date 03 Dec 2012 Sample Name TP3 0.0-0.2 | SE114050.006 Soil 03 Dec 2012 TP3 0.3-0.4 | SE114050.007 Soil 03 Dec 2012 TP4 0.0-0.1 | SE114050.008 Soil 03 Dec 2012 TP4 0.1-0.2 |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **81** | **77** | **79** | **72** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **85** | **81** | **84** | **77** |
| d8-toluene (Surrogate) | % | - | **80** | **74** | **77** | **76** |
| Bromofluorobenzene (Surrogate) | % | - | **85** | **84** | **86** | **75** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410** | | | | | | |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **81** | **77** | **79** | **72** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **85** | **81** | **84** | **77** |
| d8-toluene (Surrogate) | % | - | **80** | **74** | **77** | **76** |
| Bromofluorobenzene (Surrogate) | % | - | **85** | **84** | **86** | **75** |
| VPH F Bands | | | | | | |
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | <25 | <25 | <25 | <25 |

| Parameter | Units | LOR | Sample Number SE114050.005 Soil 03 Dec 2012 TP3 0.0-0.2 | SE114050.006 Soil 03 Dec 2012 TP3 0.3-0.4 | SE114050.007 Soil 03 Dec 2012 TP4 0.0-0.1 | SE114050.008 Soil 03 Dec 2012 TP4 0.1-0.2 |
|---|---|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **106** | **106** | **112** | **110** |
| 2-fluorobiphenyl (Surrogate) | % | - | **100** | **100** | **100** | **102** |
| d14-p-terphenyl (Surrogate) | % | - | **106** | **102** | **106** | **104** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114050.005<br>Soil<br>03 Dec 2012<br>TP3 0.0-0.2 | SE114050.006<br>Soil<br>03 Dec 2012<br>TP3 0.3-0.4 | SE114050.007<br>Soil<br>03 Dec 2012<br>TP4 0.0-0.1 | SE114050.008<br>Soil<br>03 Dec 2012<br>TP4 0.1-0.2 |
|---|---|---|---|---|---|---|
| **Total Fluoride in Soil Method: AN142** | | | | | | |
| Total Fluoride | mg/kg | 40 | - | - | - | - |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | |
| Arsenic, As | mg/kg | 3 | <3 | <3 | **11** | <3 |
| Cadmium, Cd | mg/kg | 0.3 | **0.4** | <0.3 | **0.4** | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **23** | **2.2** | **13** | **12** |
| Copper, Cu | mg/kg | 0.5 | **20** | <0.5 | **56** | **2.6** |
| Lead, Pb | mg/kg | 1 | **43** | <1 | **74** | **14** |
| Nickel, Ni | mg/kg | 0.5 | **8.8** | <0.5 | **8.5** | **0.8** |
| Zinc, Zn | mg/kg | 0.5 | **3400** | **160** | **1600** | **3300** |
| **Mercury in Soil Method: AN312** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Fibre ID in bulk materials Method: AN602** | | | | | | |
| FibreID | | | | | | |
| Asbestos Detected | No unit | - | - | - | - | - |
| **Moisture Content Method: AN002** | | | | | | |
| % Moisture | % | 0.5 | **5.7** | **4.7** | **8.0** | **4.6** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114050.009<br>Soil<br>03 Dec 2012<br>TP4 0.2-0.3 | SE114050.010<br>Soil<br>03 Dec 2012<br>TP5 0.0-0.25 | SE114050.011<br>Soil<br>03 Dec 2012<br>TP5 0.3-0.4 | SE114050.012<br>Soil<br>03 Dec 2012<br>TP6 0.3-0.35 |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **79** | **85** | **83** | **73** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **84** | **89** | **86** | **86** |
| d8-toluene (Surrogate) | % | - | **79** | **81** | **80** | **77** |
| Bromofluorobenzene (Surrogate) | % | - | **82** | **92** | **88** | **86** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410** | | | | | | |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **79** | **85** | **83** | **73** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **84** | **89** | **86** | **86** |
| d8-toluene (Surrogate) | % | - | **79** | **81** | **80** | **77** |
| Bromofluorobenzene (Surrogate) | % | - | **82** | **92** | **88** | **86** |
| VPH F Bands | | | | | | |
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | <25 | <25 | <25 | <25 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114050.009<br>Soil<br>03 Dec 2012<br>TP4 0.2-0.3 | SE114050.010<br>Soil<br>03 Dec 2012<br>TP5 0.0-0.25 | SE114050.011<br>Soil<br>03 Dec 2012<br>TP5 0.3-0.4 | SE114050.012<br>Soil<br>03 Dec 2012<br>TP6 0.3-0.35 |
|---|---|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.2** |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.1** |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.4** |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.2** |
| Benzo(k)fluoranthene | mg/kg | 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 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **114** | **112** | **114** | **94** |
| 2-fluorobiphenyl (Surrogate) | % | - | **100** | **100** | **102** | **102** |
| d14-p-terphenyl (Surrogate) | % | - | **108** | **106** | **106** | **113** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114050.009<br>Soil<br>03 Dec 2012<br>TP4 0.2-0.3 | SE114050.010<br>Soil<br>03 Dec 2012<br>TP5 0.0-0.25 | SE114050.011<br>Soil<br>03 Dec 2012<br>TP5 0.3-0.4 | SE114050.012<br>Soil<br>03 Dec 2012<br>TP6 0.3-0.35 |
|---|---|---|---|---|---|---|
| **Total Fluoride in Soil Method: AN142** | | | | | | |
| Total Fluoride | mg/kg | 40 | - | - | - | - |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | |
| Arsenic, As | mg/kg | 3 | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | **0.5** |
| Chromium, Cr | mg/kg | 0.3 | **1.9** | **3.7** | **2.0** | **160** |
| Copper, Cu | mg/kg | 0.5 | <0.5 | **4.8** | <0.5 | **15** |
| Lead, Pb | mg/kg | 1 | <1 | **9** | **1** | **41** |
| Nickel, Ni | mg/kg | 0.5 | <0.5 | **1.1** | **0.8** | **6.9** |
| Zinc, Zn | mg/kg | 0.5 | **43** | **240** | **19** | **900** |
| **Mercury in Soil Method: AN312** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Fibre ID in bulk materials Method: AN602** | | | | | | |
| FibreID | | | | | | |
| Asbestos Detected | No unit | - | - | - | - | - |
| **Moisture Content Method: AN002** | | | | | | |
| % Moisture | % | 0.5 | **3.0** | **5.3** | **3.6** | **8.5** |

| Parameter | Units | LOR | Sample Number SE114050.013 Sample Matrix Soil Sample Date 03 Dec 2012 Sample Name TP6 0.4-0.5 | SE114050.014 Soil 03 Dec 2012 TP6 0.7-0.8 | SE114050.015 Soil 03 Dec 2012 TP7 0.1-0.2 | SE114050.016 Soil 03 Dec 2012 TP7 0.3-0.4 |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **75** | **83** | **71** | **73** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **84** | **75** | **80** | **71** |
| d8-toluene (Surrogate) | % | - | **77** | **78** | **70** | **72** |
| Bromofluorobenzene (Surrogate) | % | - | **85** | **74** | **81** | **76** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410** | | | | | | |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **75** | **83** | **71** | **73** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **84** | **75** | **80** | **71** |
| d8-toluene (Surrogate) | % | - | **77** | **78** | **70** | **72** |
| Bromofluorobenzene (Surrogate) | % | - | **85** | **74** | **81** | **76** |
| VPH F Bands | | | | | | |
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | <25 | <25 | <25 | <25 |

| Parameter | Units | LOR | Sample Number SE114050.013 Soil 03 Dec 2012 TP6 0.4-0.5 | SE114050.014 Soil 03 Dec 2012 TP6 0.7-0.8 | SE114050.015 Soil 03 Dec 2012 TP7 0.1-0.2 | SE114050.016 Soil 03 Dec 2012 TP7 0.3-0.4 |
|---|---|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **112** | **82** | **76** | **87** |
| 2-fluorobiphenyl (Surrogate) | % | - | **111** | **100** | **78** | **100** |
| d14-p-terphenyl (Surrogate) | % | - | **118** | **118** | **89** | **122** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114050.013<br>Soil<br>03 Dec 2012<br>TP6 0.4-0.5 | SE114050.014<br>Soil<br>03 Dec 2012<br>TP6 0.7-0.8 | SE114050.015<br>Soil<br>03 Dec 2012<br>TP7 0.1-0.2 | SE114050.016<br>Soil<br>03 Dec 2012<br>TP7 0.3-0.4 |
|---|---|---|---|---|---|---|---|
| **Total Fluoride in Soil Method: AN142** | | | | | | | |
| Total Fluoride | mg/kg | 40 | | - | **61** | - | <40 |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | **4** | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | **0.5** | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **3.2** | **2.0** | **76** | **1.3** |
| Copper, Cu | mg/kg | 0.5 | | **1.8** | <0.5 | **36** | <0.5 |
| Lead, Pb | mg/kg | 1 | | **4** | <1 | **31** | <1 |
| Nickel, Ni | mg/kg | 0.5 | | **0.6** | **0.6** | **11** | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **140** | **24** | **690** | **24** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Fibre ID in bulk materials Method: AN602** | | | | | | | |
| FibreID | | | | | | | |
| Asbestos Detected | No unit | - | | - | - | - | - |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **6.2** | **6.2** | **8.2** | **21** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114050.017<br>Soil<br>03 Dec 2012<br>TP8 0.1-0.2 | SE114050.018<br>Soil<br>03 Dec 2012<br>TP8 0.5-0.6 | SE114050.019<br>Soil<br>03 Dec 2012<br>TP9 0.4-0.5 | SE114050.020<br>Soil<br>03 Dec 2012<br>TP10 0.1-0.2 |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **75** | **75** | **79** | **77** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **83** | **74** | **71** | **85** |
| d8-toluene (Surrogate) | % | - | **76** | **72** | **71** | **75** |
| Bromofluorobenzene (Surrogate) | % | - | **83** | **70** | **77** | **81** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410** | | | | | | |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **75** | **75** | **79** | **77** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **83** | **74** | **71** | **85** |
| d8-toluene (Surrogate) | % | - | **76** | **72** | **71** | **75** |
| Bromofluorobenzene (Surrogate) | % | - | **83** | **70** | **77** | **81** |
| VPH F Bands | | | | | | |
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | <25 | <25 | <25 | <25 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114050.017<br>Soil<br>03 Dec 2012<br>TP8 0.1-0.2 | SE114050.018<br>Soil<br>03 Dec 2012<br>TP8 0.5-0.6 | SE114050.019<br>Soil<br>03 Dec 2012<br>TP9 0.4-0.5 | SE114050.020<br>Soil<br>03 Dec 2012<br>TP10 0.1-0.2 |
|---|---|---|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | | |
| TRH C10-C14 | mg/kg | 20 | | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | | <45 | <45 | <45 | **82** |
| TRH C29-C36 | mg/kg | 45 | | <45 | <45 | <45 | **120** |
| TRH C37-C40 | mg/kg | 100 | | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | | <110 | <110 | <110 | **200** |
| TRH C10-C40 Total | mg/kg | 210 | | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | | <90 | <90 | <90 | **200** |
| TRH >C34-C40 (F4) | mg/kg | 120 | | <120 | <120 | <120 | <120 |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | **0.1** |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | **0.3** |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | **0.3** |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | **0.6** |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | **0.3** |
| Benzo(b)fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | **1.0** |
| Benzo(k)fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | **0.3** |
| Benzo(a)pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | **0.6** |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | **0.4** |
| Dibenzo(a&h)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(ghi)perylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | **0.5** |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | **3.1** |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **92** | **92** | **97** | **81** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **103** | **104** | **109** | **108** |
| d14-p-terphenyl (Surrogate) | % | - | | **120** | **112** | **117** | **117** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114050.017<br>Soil<br>03 Dec 2012<br>TP8 0.1-0.2 | SE114050.018<br>Soil<br>03 Dec 2012<br>TP8 0.5-0.6 | SE114050.019<br>Soil<br>03 Dec 2012<br>TP9 0.4-0.5 | SE114050.020<br>Soil<br>03 Dec 2012<br>TP10 0.1-0.2 |
|---|---|---|---|---|---|---|
| **Total Fluoride in Soil Method: AN142** | | | | | | |
| Total Fluoride | mg/kg | 40 | - | <40 | <40 | - |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | |
| Arsenic, As | mg/kg | 3 | **3** | <3 | <3 | **6** |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | **0.7** |
| Chromium, Cr | mg/kg | 0.3 | **11** | **3.1** | **1.9** | **61** |
| Copper, Cu | mg/kg | 0.5 | **14** | **0.6** | <0.5 | **61** |
| Lead, Pb | mg/kg | 1 | **19** | **2** | <1 | **72** |
| Nickel, Ni | mg/kg | 0.5 | **3.3** | **1.3** | <0.5 | **16** |
| Zinc, Zn | mg/kg | 0.5 | **490** | **19** | **22** | **5200** |
| **Mercury in Soil Method: AN312** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Fibre ID in bulk materials Method: AN602** | | | | | | |
| FibreID | | | | | | |
| Asbestos Detected | No unit | - | - | - | - | - |
| **Moisture Content Method: AN002** | | | | | | |
| % Moisture | % | 0.5 | **6.9** | **19** | **6.7** | **7.4** |

| Parameter | Units | LOR | Sample Number SE114050.021 | SE114050.022 | SE114050.023 | SE114050.024 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Sample Date | | | 03 Dec 2012 | 03 Dec 2012 | 03 Dec 2012 | 03 Dec 2012 |
| Sample Name | | | TP10 0.4-0.5 | TP10 0.7-0.8 | QC1 | QC2 |
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **76** | **81** | **77** | **72** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **82** | **72** | **81** | **77** |
| d8-toluene (Surrogate) | % | - | **77** | **73** | **73** | **75** |
| Bromofluorobenzene (Surrogate) | % | - | **75** | **71** | **77** | **73** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410** | | | | | | |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **76** | **81** | **77** | **72** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **82** | **72** | **81** | **77** |
| d8-toluene (Surrogate) | % | - | **77** | **73** | **73** | **75** |
| Bromofluorobenzene (Surrogate) | % | - | **75** | **71** | **77** | **73** |
| VPH F Bands | | | | | | |
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | <25 | <25 | <25 | <25 |

| Parameter | Units | LOR | Sample Number SE114050.021 Sample Matrix Soil Sample Date 03 Dec 2012 Sample Name TP10 0.4-0.5 | SE114050.022 Soil 03 Dec 2012 TP10 0.7-0.8 | SE114050.023 Soil 03 Dec 2012 QC1 | SE114050.024 Soil 03 Dec 2012 QC2 |
|---|---|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **102** | **102** | **101** | **95** |
| 2-fluorobiphenyl (Surrogate) | % | - | **108** | **103** | **106** | **105** |
| d14-p-terphenyl (Surrogate) | % | - | **110** | **116** | **108** | **112** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114050.021<br>Soil<br>03 Dec 2012<br>TP10 0.4-0.5 | SE114050.022<br>Soil<br>03 Dec 2012<br>TP10 0.7-0.8 | SE114050.023<br>Soil<br>03 Dec 2012<br>QC1 | SE114050.024<br>Soil<br>03 Dec 2012<br>QC2 |
|---|---|---|---|---|---|---|
| **Total Fluoride in Soil Method: AN142** | | | | | | |
| Total Fluoride | mg/kg | 40 | - | <40 | - | - |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | |
| Arsenic, As | mg/kg | 3 | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **0.9** | **1.5** | **17** | **5.2** |
| Copper, Cu | mg/kg | 0.5 | **1.8** | <0.5 | **3.7** | **2.2** |
| Lead, Pb | mg/kg | 1 | **3** | <1 | **23** | **4** |
| Nickel, Ni | mg/kg | 0.5 | <0.5 | <0.5 | **0.9** | **0.6** |
| Zinc, Zn | mg/kg | 0.5 | **4.7** | **1.3** | **4400** | **120** |
| **Mercury in Soil Method: AN312** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Fibre ID in bulk materials Method: AN602** | | | | | | |
| FibreID | | | | | | |
| Asbestos Detected | No unit | - | - | - | - | - |
| **Moisture Content Method: AN002** | | | | | | |
| % Moisture | % | 0.5 | **5.6** | **2.7** | **6.4** | **18** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114050.025<br>Material<br>03 Dec 2012<br>WP12 | SE114050.026<br>Material<br>03 Dec 2012<br>WP13 |
|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | |
| Benzene | mg/kg | 0.1 | - | - |
| Toluene | mg/kg | 0.1 | - | - |
| Ethylbenzene | mg/kg | 0.1 | - | - |
| m/p-xylene | mg/kg | 0.2 | - | - |
| o-xylene | mg/kg | 0.1 | - | - |
| Polycyclic VOCs | | | | |
| Naphthalene | mg/kg | 0.1 | - | - |
| Surrogates | | | | |
| Dibromofluoromethane (Surrogate) | % | - | - | - |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - |
| d8-toluene (Surrogate) | % | - | - | - |
| Bromofluorobenzene (Surrogate) | % | - | - | - |
| Totals | | | | |
| Total Xylenes* | mg/kg | 0.3 | - | - |
| Total BTEX* | mg/kg | - | - | - |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410** | | | | |
| TRH C6-C9 | mg/kg | 20 | - | - |
| Surrogates | | | | |
| Dibromofluoromethane (Surrogate) | % | - | - | - |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - |
| d8-toluene (Surrogate) | % | - | - | - |
| Bromofluorobenzene (Surrogate) | % | - | - | - |
| VPH F Bands | | | | |
| Benzene (F0) | mg/kg | 0.1 | - | - |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114050.025<br>Material<br>03 Dec 2012<br>WP12 | SE114050.026<br>Material<br>03 Dec 2012<br>WP13 |
|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | |
| TRH C10-C14 | mg/kg | 20 | - | - |
| TRH C15-C28 | mg/kg | 45 | - | - |
| TRH C29-C36 | mg/kg | 45 | - | - |
| TRH C37-C40 | mg/kg | 100 | - | - |
| TRH C10-C36 Total | mg/kg | 110 | - | - |
| TRH C10-C40 Total | mg/kg | 210 | - | - |
| TRH F Bands | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | - | - |
| TRH >C16-C34 (F3) | mg/kg | 90 | - | - |
| TRH >C34-C40 (F4) | mg/kg | 120 | - | - |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | |
| Naphthalene | mg/kg | 0.1 | - | - |
| 2-methylnaphthalene | mg/kg | 0.1 | - | - |
| 1-methylnaphthalene | mg/kg | 0.1 | - | - |
| Acenaphthylene | mg/kg | 0.1 | - | - |
| Acenaphthene | mg/kg | 0.1 | - | - |
| Fluorene | mg/kg | 0.1 | - | - |
| Phenanthrene | mg/kg | 0.1 | - | - |
| Anthracene | mg/kg | 0.1 | - | - |
| Fluoranthene | mg/kg | 0.1 | - | - |
| Pyrene | mg/kg | 0.1 | - | - |
| Benzo(a)anthracene | mg/kg | 0.1 | - | - |
| Chrysene | mg/kg | 0.1 | - | - |
| Benzo(b)fluoranthene | mg/kg | 0.1 | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.1 | - | - |
| Benzo(a)pyrene | mg/kg | 0.1 | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | - | - |
| Dibenzo(a&h)anthracene | mg/kg | 0.1 | - | - |
| Benzo(ghi)perylene | mg/kg | 0.1 | - | - |
| Total PAH | mg/kg | 0.8 | - | - |
| Surrogates | | | | |
| d5-nitrobenzene (Surrogate) | % | - | - | - |
| 2-fluorobiphenyl (Surrogate) | % | - | - | - |
| d14-p-terphenyl (Surrogate) | % | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114050.025<br>Material<br>03 Dec 2012<br>WP12 | SE114050.026<br>Material<br>03 Dec 2012<br>WP13 |
|---|---|---|---|---|
| **Total Fluoride in Soil Method: AN142** | | | | |
| Total Fluoride | mg/kg | 40 | - | - |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | |
| Arsenic, As | mg/kg | 3 | - | - |
| Cadmium, Cd | mg/kg | 0.3 | - | - |
| Chromium, Cr | mg/kg | 0.3 | - | - |
| Copper, Cu | mg/kg | 0.5 | - | - |
| Lead, Pb | mg/kg | 1 | - | - |
| Nickel, Ni | mg/kg | 0.5 | - | - |
| Zinc, Zn | mg/kg | 0.5 | - | - |
| **Mercury in Soil Method: AN312** | | | | |
| Mercury | mg/kg | 0.05 | - | - |
| **Fibre ID in bulk materials Method: AN602** | | | | |
| FibreID | | | | |
| Asbestos Detected | No unit | - | No | No |
| **Moisture Content Method: AN002** | | | | |
| % Moisture | % | 0.5 | - | - |

# QC SUMMARY

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.

**Mercury in Soil Method: ME-(AU)-[ENV]AN312**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Mercury | LB030813 | mg/kg | 0.05 | <0.05 | 0% | 96% | 90% |
| | LB030817 | mg/kg | 0.05 | <0.05 | 0% | 95% | 93% |

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Naphthalene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | 98% | 93% |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | 99% | |
| 2-methylnaphthalene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | NA | |
| 1-methylnaphthalene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | NA | |
| Acenaphthylene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | 96% | 90% |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | 102% | |
| Acenaphthene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | 103% | 94% |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | 101% | |
| Fluorene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | NA | |
| Phenanthrene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | 101% | 94% |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | 106% | |
| Anthracene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | 100% | 92% |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | 104% | |
| Fluoranthene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | 104% | 97% |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | 104% | |
| Pyrene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | 100% | 95% |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | 103% | |
| Benzo(a)anthracene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | NA | |
| Chrysene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | NA | |
| Benzo(b)fluoranthene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | NA | |
| Benzo(k)fluoranthene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | NA | |
| Benzo(a)pyrene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | 102% | 95% |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | 118% | |
| Indeno(1,2,3-cd)pyrene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | NA | |
| Dibenzo(a&h)anthracene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | NA | |
| Benzo(ghi)perylene | LB030800 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB030801 | mg/kg | 0.1 | <0.1 | 0% | NA | |
| Total PAH | LB030800 | mg/kg | 0.8 | <0.8 | 0% | NA | NA |
| | LB030801 | mg/kg | 0.8 | <0.8 | 0% | NA | |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| d5-nitrobenzene (Surrogate) | LB030800 | % | - | 104% | 2 - 4% | 100% | 108% |
| | LB030801 | % | - | 102% | 6% | 101% | |
| 2-fluorobiphenyl (Surrogate) | LB030800 | % | - | 102% | 0 - 6% | 96% | 102% |
| | LB030801 | % | - | 108% | 0% | 106% | |
| d14-p-terphenyl (Surrogate) | LB030800 | % | - | 100% | 4% | 102% | 106% |
| | LB030801 | % | - | 116% | 3% | 104% | |

# QC SUMMARY

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.

**Total Fluoride in Soil** **Method: ME-(AU)-[ENV]AN142**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MSD %RPD |
|---|---|---|---|---|---|---|---|
| Total Fluoride | LB030827 | mg/kg | 40 | <40 | 13% | 105% | NA |

**Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest** **Method: ME-(AU)-[ENV]AN040/AN320**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Arsenic, As | LB030807 | mg/kg | 3 | <3 | 0% | 96% | 69% |
| | LB030808 | mg/kg | 3 | <3 | 0% | 93% | 70% |
| Cadmium, Cd | LB030807 | mg/kg | 0.3 | <0.3 | 0% | 98% | 81% |
| | LB030808 | mg/kg | 0.3 | <0.3 | 0% | 96% | 85% |
| Chromium, Cr | LB030807 | mg/kg | 0.3 | <0.3 | 2 - 3% | 97% | 76% |
| | LB030808 | mg/kg | 0.3 | <0.3 | 6% | 96% | 82% |
| Copper, Cu | LB030807 | mg/kg | 0.5 | <0.5 | 0 - 26% | 97% | 85% |
| | LB030808 | mg/kg | 0.5 | <0.5 | 2% | 95% | 105% |
| Lead, Pb | LB030807 | mg/kg | 1 | <1 | 0 - 7% | 97% | 80% |
| | LB030808 | mg/kg | 1 | <1 | 8% | 95% | 105% |
| Nickel, Ni | LB030807 | mg/kg | 0.5 | <0.5 | 0 - 1% | 97% | 83% |
| | LB030808 | mg/kg | 0.5 | <0.5 | 1% | 95% | 84% |
| Zinc, Zn | LB030807 | mg/kg | 0.5 | <0.5 | 3 - 5% | 97% | 81% |
| | LB030808 | mg/kg | 0.5 | <0.5 | 6% | 96% | 705% |

**TRH (Total Recoverable Hydrocarbons) in Soil** **Method: ME-(AU)-[ENV]AN403**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | LB030800 | mg/kg | 20 | <20 | 0% | 98% | 95% |
| | LB030801 | mg/kg | 20 | <20 | 0% | 100% | |
| TRH C15-C28 | LB030800 | mg/kg | 45 | <45 | 0% | 90% | 88% |
| | LB030801 | mg/kg | 45 | <45 | 0% | 95% | |
| TRH C29-C36 | LB030800 | mg/kg | 45 | <45 | 0% | 85% | 88% |
| | LB030801 | mg/kg | 45 | <45 | 0% | 85% | |
| TRH C37-C40 | LB030800 | mg/kg | 100 | <100 | 0% | NA | NA |
| | LB030801 | mg/kg | 100 | <100 | 0% | NA | |
| TRH C10-C36 Total | LB030800 | mg/kg | 110 | <110 | 0% | NA | NA |
| | LB030801 | mg/kg | 110 | <110 | 0% | NA | |
| TRH C10-C40 Total | LB030800 | mg/kg | 210 | <210 | 0% | NA | NA |
| | LB030801 | mg/kg | 210 | <210 | 0% | NA | |

TRH F Bands

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| TRH >C10-C16 (F2) | LB030800 | mg/kg | 25 | <25 | 0% | 98% | 95% |
| | LB030801 | mg/kg | 25 | <25 | 0% | 100% | |
| TRH >C16-C34 (F3) | LB030800 | mg/kg | 90 | <90 | 0% | 88% | 85% |
| | LB030801 | mg/kg | 90 | <90 | 0% | 95% | |
| TRH >C34-C40 (F4) | LB030800 | mg/kg | 120 | <120 | 0% | 85% | NA |
| | LB030801 | mg/kg | 120 | <120 | 0% | 90% | |

# QC SUMMARY

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.

## VOC's in Soil Method: ME-(AU)-[ENV]AN433/AN434

Monocyclic Aromatic Hydrocarbons

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Benzene | LB030822 | mg/kg | 0.1 | <0.1 | 0% | 78 - 81% | 71 - 75% |
| Toluene | LB030822 | mg/kg | 0.1 | <0.1 | 0% | 76 - 82% | 76 - 77% |
| Ethylbenzene | LB030822 | mg/kg | 0.1 | <0.1 | 0% | 82 - 89% | 82 - 83% |
| m/p-xylene | LB030822 | mg/kg | 0.2 | <0.2 | 0% | 82 - 91% | 76 - 83% |
| o-xylene | LB030822 | mg/kg | 0.1 | <0.1 | 0% | 84 - 93% | 76 - 83% |

Polycyclic VOCs

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Naphthalene | LB030822 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Dibromofluoromethane (Surrogate) | LB030822 | % | - | 71 - 93% | 1 - 9% | 71 - 87% | 73 - 81% |
| d4-1,2-dichloroethane (Surrogate) | LB030822 | % | - | 78 - 97% | 3 - 9% | 76 - 91% | 76 - 84% |
| d8-toluene (Surrogate) | LB030822 | % | - | 71 - 95% | 1 - 9% | 71 - 87% | 72 - 79% |
| Bromofluorobenzene (Surrogate) | LB030822 | % | - | 74 - 99% | 1 - 8% | 96 - 100% | 88 - 91% |

Totals

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Total Xylenes* | LB030822 | mg/kg | 0.3 | <0.3 | 0% | NA | NA |
| Total BTEX* | LB030822 | mg/kg | - | 0 | 0% | NA | NA |

## Volatile Petroleum Hydrocarbons in Soil Method: ME-(AU)-[ENV]AN433/AN434/AN410

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| TRH C6-C9 | LB030822 | mg/kg | 20 | <20 | 0% | 99 - 101% | 95% |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Dibromofluoromethane (Surrogate) | LB030822 | % | - | 71 - 93% | 1 - 9% | 71 - 87% | 73 - 81% |
| d4-1,2-dichloroethane (Surrogate) | LB030822 | % | - | 78 - 97% | 3 - 9% | 76 - 91% | 76 - 84% |
| d8-toluene (Surrogate) | LB030822 | % | - | 71 - 95% | 1 - 9% | 71 - 87% | 72 - 79% |
| Bromofluorobenzene (Surrogate) | LB030822 | % | - | 74 - 99% | 1 - 8% | 96 - 100% | 88 - 91% |

VPH F Bands

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Benzene (F0) | LB030822 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| TRH C6-C10 minus BTEX (F1) | LB030822 | mg/kg | 25 | <25 | 0% | 123 - 131% | 124 - 133% |

| 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. |
| 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 analsysis by ASS or ICP as per USEPA Method 200.8. |
| AN088 | Orbital rolling for Organic pollutants are extracted from soil/sediment by transferring an appropriate mass of sample to a clear soil jar and extracting with 1:1 Dichloromethane/Acetone. Orbital Rolling method is intended for the extraction of semi-volatile organic compounds from soil/sediment samples, and is based somewhat on USEPA method 3570 (Micro Organic extraction and sample preparation). Method 3700. |
| AN142 | Fluoride can be measured in soil as water extractable or 'total' by Ion Selective electrode. In this method the solid sample is weighed and then fused with sodium hydroxide at 600°C. The sample is carefully neutralise with hydrochloric acid and the solution of the melt is cooled and made up to volume. The final solution is then compared to synthetic Digestion Matrix standards with analysis by ISE electrode for a total fluoride result after being calculated back to original mass. |
| 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 |
| 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 Draft NEPM 2011, >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is not corrected for Naphthalene. |
| 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 Petroleum Hydrocarbons (TPH) 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, dependant 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). |
| AN433/AN434 | 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. |
| AN433/AN434/AN410 | VOCs and C6-C9/C6-C10 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. |

# METHOD SUMMARY

| METHOD | METHODOLOGY SUMMARY |
|---|---|
| AN602 | 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. |

FOOTNOTES

| | |
|---|---|
| IS | Insufficient sample for analysis. |
| LNR | Sample listed, but not received. |
| * | This analysis is not covered by the scope of accreditation. |
| ^ | Performed by outside laboratory. |
| LOR | Limit of Reporting |
| ↑↓ | Raised or Lowered Limit of Reporting |
| QFH | QC result is above the upper tolerance |
| QFL | QC result is below the lower tolerance |
| - | The sample was not analysed for this analyte |
| NVL | Not Validated |

Samples analysed as received.
Solid samples expressed on a dry weight basis.

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here:
http://www.sgs.com.au.pv.sgsv3/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

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# ANALYTICAL REPORT

WORLD RECOGNISED ACCREDITATION

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | MB Engineering Solutions |
| Address | 6/56 Industrial Drive<br>Mayfield NSW 2304 |
| Telephone | 0427 893 668 |
| Facsimile | +61 2 4913 5372 |
| Email | james@mbengineering.com.au |
| Project | **MBE2016** |
| Order Number | **MBE2016** |
| Samples | 26 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | SE114050 R0 |
| Report Number | 0000046750 |
| Date Reported | 06/12/2012 15:44:16 |
| Date Received | 04 Dec 2012 |

## COMMENTS

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

Asbestos analysed by Approved Identifier Ravee Sivasubramaniam.

## SIGNATORIES

Andy Sutton
Organics Chemist

Huong Crawford
Laboratory Manager

Ravee Sivasubramaniam
Hygienist

Snezana Kostoska
Inorganics Chemist

# ANALYTICAL REPORT

RESULTS

Fibre ID in bulk materials — Method AN602

| Laboratory Reference | Client Reference | Matrix | Sample Description | Date Sampled | Fibre Identification | Est.%w/w |
|---|---|---|---|---|---|---|
| SE114050.025 | WP12 | Other | 40x40x3mm Cement sheet | 03 Dec 2012 | No Asbestos Detected | |
| SE114050.026 | WP13 | Other | 100x60x20mm Cement board | 03 Dec 2012 | No Asbestos Detected | |

# METHOD SUMMARY

| METHOD | METHODOLOGY SUMMARY |
|---|---|
| AN602 | 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. |

FOOTNOTES

| | | | | | |
|---|---|---|---|---|---|
| Amosite | - | Brown Asbestos | NA | - | Not Analysed |
| Chrysotile | - | White Asbestos | LNR | - | Listed, Not Required |
| Crocidolite | - | Blue Asbestos | * | - | Not Accredited |
| Amphiboles | - | Amosite and/or Crocidolite | | | |

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.

Sampled by the client.

Where reported: 'Asbestos Detected': Asbestos detected by polarized light microscopy, including dispersion staining.
Where reported: 'No Asbestos Found': No Asbestos Found by polarized light microscopy, including dispersion staining.
Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarized 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 criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here : http://www.sgs.com.au.pv.sgsv3/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

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8 April 2013
Brad Hughes
Midal Cables International Pty Ltd
PO Box 322
RAYMOND TERRACE NSW 2324

Dear Brad

**RE: EXCAVATED NATURAL MATERIAL ASSESSMENT**
**LOT 11 MCINTYRE RD, TOMAGO**

## 1 INTRODUCTION

MB Engineering Solutions Pty Ltd (MBES) was commissioned by Midal Cables International Pty Ltd (Midal) to undertake an Excavated Natural Material (ENM) Exemption Assessment for Lot 11 DP 270328 McIntyre Rd, Tomago NSW (the site). It assumed the site is approximately 2.5 hectares.

The Midal Cables Project at the site may potentially generate approximately 9,000m$^3$ of excess spoil that will require offsite disposal. A virgin excavated natural material (VENM) and waste classification assessment was conducted on the potential spoil by MBES (MBES ref MBE2016-Report, Dec 2012). It was assessed that the surface soils of site has been impacted by a combination of past industrial activities, sand mining, contaminated groundwater and acid sulfate soils hence the subsoils on site could not be classified as VENM

Analytical results for the underlying sands on site indicated that the underlying sands are likely to meet the requirements of the NSW Office of the Environment and Heritage (NOEH) *Protection of the Environment Operations (Waste) Regulation 2005 – General Exemption Under Part 6, Clause 51 and 51A The Excavated Natural Material Exemption 2012* (ENM Exemption). To save time during construction excess spoil is preferred to be excavated and loaded directly onto trucks for offsite disposal.

The following scope of work was undertaken:

- Preparation of Site Safe Work Method Statements and associated documentation;
- Field investigations;
- Laboratory Testing; and
- Data assessment and reporting

## 2 FIELDWORK

The subsurface sands were sampled on 8 and 9 January 2013 by a MBES Environmental Scientist. 35 bore holes were drilled using a 150mm augur mounted on a mini excavator to a target depth of 2m below ground surface (MBGS). Samples were collected from the auger with care taken to remove the



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outer layer of sand before sampling to avoid cross contamination. Samples were collected from 1m and 2m below ground surface. The location of the bore holes are shown in Figure 1. It should be noted the ground surface level has been altered due to preliminary groundwork for the project that was on going at the time of sampling.

One sample was collected from 3mbgs in the vicinity of the location of borehole TP23 on 12 March 2013. The sample was field screened for the presence of potential acid sulfate soils ASS.

No staining or odours were apparent during sampling activities. The auger was decontaminated between sampling. Disposable nitrile gloves were changed between the collections of each sample.

The samples were stored in 250ml glass jars and 6kg bags. The 250mL jars were transported in an ice-filled cooler box for transport to SGS Australia Pty Ltd (SGS) for analysis under chain of custody conditions. Seven field duplicates were also collected in 250ml jars. The 6 kg bags were delivered to Qualtest Pty Ltd by MBES.

## 3 ANALYTICAL SUITE

Seventy one (+eight field duplicates, including the additional sample collected 12 March 2013) jar samples were analysed by SGS for:

- Eight Metals (arsenic, cadmium, chromium, copper, lead, nickel, zinc, and mercury);
- Benzene, toluene, ethylbenzene, xylenes;
- Total Polycyclic Aromatic Hydrocarbons
- Benzo[a]pyrene
- Electrical Conductivity (EC); and
- pH

Seventy one bag samples, including the additional sample collected 12 March 2013, were analysed by Qualtest for:

- Foreign materials by mass, including;
    - Rubber, plastic, paper, cloth, paint, wood and other vegetable matter.

Both laboratories are NATA accredited for the analysis undertaken.

## 4 RESULTS AND DISCUSSION

### 4.1 Field Results

Thirty five boreholes were drilled and samples were collected from 1m and 2m below ground surface. This was sufficient sampling to characterise the subsoil a 2.5 hectare site to a maximum depth of 2m. The diameter of a hot spot can be detected with 95% confidence is 31.5m in accordance with ENM Exemption. Near sampling location TP23 an additional sample (labelled TP31 3m) was collected at 3mbgs and field screened for ASS which indicated that the sample was unlikely to contain ASS.

Sand was encountered at surface in the northern section of site where preliminary groundwork had commenced. In undisturbed areas the surface was covered with fill 0.1-0.2m (gravelly/sandy clay) or asphalt. Large concrete footings were present near the centre of site.

In general, the sand on site was:

- Fine–medium grained;
- Yellow, light brown, brown, dark brown, or white; and



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- Some traces of gravel.

Sand collected from TP7 at 2m was black and fine to medium grained.

### 4.2 Quality Assurance / Quality Control

SGS conducted internal quality control using spikes, laboratory duplicates and method blanks. The laboratory internal quality control testing showed method blank results below the laboratory limit of reporting and duplicate results, laboratory control spike and matrix spike recoveries within control limits. The exception was zinc which reported a matrix spike recovery of 52%. The failed spike recovery for zinc failed due to the significant concentration of zinc in the sample compared to the concentration of the spike solution. SGS is NATA certified for the analysis undertaken for this exemption.

Seven field duplicates were analysed by SGS. The relative percentage difference (RPD) between the primary and duplicate Zinc (QC5, 6, 8, 9 and 10) and electrical conductivity were outside the acceptance criteria of 50%. The remaining RPDs were within the acceptance criteria.

Based on review of the QA/QC data (>95% of the QC data was within acceptance criteria), it is considered that the results are likely to be representative of conditions at the sampling locations at the time of sampling and are suitable for use in the resource recovery exemption.

### 4.3 Laboratory Results

The test results show no exceedances for the Absolute Maximum and Maximum Average Concentrations for the analytes tested with the exception of TPH $C_{10}$-$C_{36}$ in samples TP34 1m and TP34 2m and zinc in sample TP34 1m. Table 1, below, summarises the average and maximum concentrations. Table 2, attached, summarises the data and presents the individual results and average values of the data, and compares the results to the ENM exemption criteria.

**Table 1: Average and Maximum Analyte Concentration Summary**

| | | Maximum average concentration for characterisation | Absolute maximum concentration | Laboratory* Average Concentration | Laboratory* Maximum Concentration |
|---|---|---|---|---|---|
| **Analyte Name** | **Units** | | | | |
| Benzene | mg/kg | NA | 0.5 | <0.1 | <0.1 |
| Toluene | mg/kg | NA | 65 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | NA | 25 | <0.1 | <0.1 |
| Total Xylenes | mg/kg | NA | 15 | <0.3 | <0.3 |
| TRH C10-C36 Total | mg/kg | 250 | 500 | <110 | <110 |
| Benzo(a)pyrene | mg/kg | 0.5 | 1 | <0.1 | <0.1 |
| Total PAH | mg/kg | 20 | 40 | <0.8 | <0.8 |
| pH | No unit | 5 to 9 | 4.5 to 10 | 6.2 | 8.2 |
| Conductivity | dS/m | 1.5 | 3 | 0.02 | 0.2 |
| Arsenic | mg/kg | 20 | 40 | <3 | <3 |
| Cadmium | mg/kg | 0.5 | 1 | <0.3. | <0.3 |



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| | | Maximum average concentration for characterisation | Absolute maximum concentration | Laboratory* Average Concentration | Laboratory* Maximum Concentration |
|---|---|---|---|---|---|
| Chromium | mg/kg | 75 | 150 | 2.1 | 17 |
| Copper | mg/kg | 100 | 200 | 2.2 | 9.1 |
| Lead | mg/kg | 50 | 100 | 2.6 | 12 |
| Nickel | mg/kg | 30 | 60 | 1 | 4.3 |
| Zinc | mg/kg | 150 | 300 | 26 | 190 |
| Mercury | mg/kg | 0.5 | 1 | <0.05 | <0.05 |
| Rubber, plastic, bitumen, paper, cloth, paint and wood | % | 0.05 | 0.1 | 0.0 | 0.1 |
| * Samples TP34 1m and TP34 2m excluded from the data set. | | | | | |

## 5 CONCLUSION

Based on the data presented, the sand as described in Section 4.1 meets the criteria for the ENM Exemption to a depth of 2mbgs and locations TP1-33 and TP 35. Sand excavated from 3mbgs in the vicinity of location TP23 can also be considered ENM. Soil excavated within a 31.5 diameter of TP34 is excluded and can be kept on site.

The findings contained in this report are the result of discrete / specific methodologies used in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general condition of the stockpile sampled. This report has been provided by MBES for the benefit of MIDAL only.

We trust this meets your requirements at this time. Should you have any questions, please do not hesitate to contact the undersigned.

For and on behalf of MB Engineering Solutions Pty Ltd

**James McMahon**

**Principal Environmental Scientist**

**Attachments**
Figure 1
Table 2
Laboratory Certificates

**Note:** MBE2017-Report was revised to allow for the additional sample collected on 12 March 2013.



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| | | | | | | |
|---|---|---|---|---|---|---|
| **Drawing Number** | Figure 1 | **Scale** | Not to Scale | **MIDAL CABLES PROJECT TOMAGO** | | |
| **Title** | ENM Sampling Locations | **Page Size** | A3 | | | |
| **Client** | Midal Cable International Pty Ltd | **Revision** | 0 | **North →** | **Legend** | ⊙ Approximate bore hole location |
| **Site** | Lot 11 DP 270328 McIntyre Rd, Tomago NSW | | | | | Approximate site boundary |

MB ENGINEERING SOLUTIONS

**TABLE 2**
**Midal Cables International P/L**
**Excavated Natural Material Assessment**

8 April 2013

| | | Maximum average concentration for characterisation | Absolute maximum concentration | **Description** | TP1 1m | QC9 | %RPD | TP1 2m | TP2 1m | TP2 2m | TP3 1m | QC10 | %RPD | TP3 2m | TP4 1m | TP4 2m | TP5 1m | TP5 2m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | **Sample Date** | 9/1/2013 | 9/1/2013 | | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 |
| | | | | **Matrix** | Soil | Soil | | Soil | Soil | Soil | Soil | Soil | | Soil | Soil | Soil | Soil | Soil |
| **Analyte Name** | **Units** | | | **Reporting Limit** | **Result** | **Result** | | **Result** | **Result** | **Result** | **Result** | **Result** | | **Result** | **Result** | **Result** | **Result** | **Result** |
| Benzene | mg/kg | NA | 0.5 | 0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | NA | 65 | 0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | NA | 25 | 0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Total Xylenes | mg/kg | NA | 15 | 0.3 | <0.3 | <0.3 | | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| TRH C10-C36 To | mg/kg | 250 | 500 | 110 | <110 | <110 | | <110 | <110 | <110 | <110 | <110 | | <110 | <110 | <110 | <110 | <110 |
| Benzo(a)pyrene | mg/kg | 0.5 | 1 | 0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Total PAH | mg/kg | 20 | 40 | 0.8 | <0.8 | <0.8 | | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| pH | No unit | 5 to 9 | 4.5 to 10 | 0 | **6.8** | **6.3** | **8%** | **6.2** | **5.2** | **6.5** | **6.3** | **6.5** | **3%** | **6.4** | **6.1** | **5.9** | **5.9** | **6.0** |
| Conductivity | dS/m | 1.5 | 3 | 1 | **0.02** | **0.02** | **15%** | **0.02** | **0.21** | **0.02** | **0.02** | **0.03** | **4%** | **0.01** | **0.01** | **0.01** | **0.01** | **0.02** |
| Arsenic | mg/kg | 20 | 40 | 3 | <3 | <3 | | <3 | <3 | <3 | <3 | <3 | | <3 | <3 | <3 | <3 | <3 |
| Cadmium | mg/kg | 0.5 | 1 | 0.3 | <0.3 | <0.3 | | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium | mg/kg | 75 | 150 | 0.3 | **2.1** | **2.3** | **9%** | **1.9** | **1.1** | **1.8** | **1.5** | **1.8** | **18%** | **1.1** | **1.1** | **1.1** | **1.6** | **0.7** |
| Copper | mg/kg | 100 | 200 | 0.5 | <0.5 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead | mg/kg | 50 | 100 | 1 | <1 | <1 | | <1 | <1 | <1 | <1 | <1 | | <1 | <1 | <1 | **1** | <1 |
| Nickel | mg/kg | 30 | 60 | 0.5 | <0.5 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Zinc | mg/kg | 150 | 300 | 0.5 | **0.8** | **1.8** | **77%** | **0.6** | **1.3** | **7.6** | **3.5** | **9.3** | **91%** | **1.8** | **1.4** | **1.3** | **6.1** | **4.8** |
| Mercury | mg/kg | 0.5 | 1 | 0.05 | <0.05 | <0.05 | | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Rubber, plastic, bitumen, paper, cloth, paint and wood | % | 0.05 | 0% | 0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

**TABLE 2**
**Midal Cables International P/L**
**Excavated Natural Material Assessment**

8 April 2013

| | | Maximum average concentration for characterisation | Absolute maximum concentration | TP6 1m | TP6 2m | TP7 1m | TP7 2m | TP8 1m | TP8 2m | TP9 1m | TP9 2m | QC11 | %RPD | TP10 1m | TP10 2m | TP11 1m | TP11 2m | TP12 1m | TP12 2m | TP13 1m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | |
| | | | | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | | 9/1/2013 | 9/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 |
| | | | | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | | Soil | Soil | Soil | Soil | Soil | Soil | Soil |
| **Analyte Name** | **Units** | | | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| Benzene | mg/kg | NA | 0.5 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | NA | 65 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | NA | 25 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Total Xylenes | mg/kg | NA | 15 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| TRH C10-C36 To | mg/kg | 250 | 500 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | | <110 | <110 | <110 | <110 | <110 | <110 | <110 |
| Benzo(a)pyrene | mg/kg | 0.5 | 1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Total PAH | mg/kg | 20 | 40 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| pH | No unit | 5 to 9 | 4.5 to 10 | **6.6** | **6.3** | **6.8** | **6.2** | **6.7** | **6.3** | **7.1** | **5.8** | **6.1** | **5%** | **4.7** | **5.6** | **7.6** | **8.2** | **6.4** | **6.6** | **5.9** |
| Conductivity | dS/m | 1.5 | 3 | **0.01** | **0.01** | **0.03** | **0.02** | **0.01** | **0.01** | **0.02** | **0.01** | **0.01** | **55%** | **0.02** | **0.03** | **0.04** | **0.04** | **0.01** | **0.02** | **0.01** |
| Arsenic | mg/kg | 20 | 40 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | | <3 | <3 | <3 | <3 | <3 | <3 | <3 |
| Cadmium | mg/kg | 0.5 | 1 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium | mg/kg | 75 | 150 | **1.5** | **1.0** | **17** | **9.1** | **1.8** | **2.0** | **1.4** | **1.8** | **1.7** | **6%** | **2.3** | **2.2** | **2.3** | **2.7** | **1.6** | **1.1** | **1.2** |
| Copper | mg/kg | 100 | 200 | <0.5 | <0.5 | **9.7** | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | <0.5 | <0.5 | **1.5** | **2.6** | **0.5** | <0.5 | <0.5 |
| Lead | mg/kg | 50 | 100 | <1 | <1 | **12** | **3** | <1 | <1 | <1 | <1 | <1 | | <1 | **1** | **2** | **3** | **1** | <1 | <1 |
| Nickel | mg/kg | 30 | 60 | <0.5 | <0.5 | **4.3** | **0.6** | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | <0.5 | **0.6** | **0.9** | **1.5** | <0.5 | <0.5 | <0.5 |
| Zinc | mg/kg | 150 | 300 | **1.1** | **23** | **170** | **3.9** | **2.7** | **0.7** | **1.4** | **3.1** | **4.6** | **39%** | **12** | **25** | **46** | **67** | **6.0** | **1.5** | **2.0** |
| Mercury | mg/kg | 0.5 | 1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Rubber, plastic, bitumen, paper, cloth, paint and wood | % | 0.05 | 0% | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

**TABLE 2**
**Midal Cables International P/L**
**Excavated Natural Material Assessment**

8 April 2013

| | | Maximum average concentration for characterisation | Absolute maximum concentration | TP13 2m | TP14 1m | TP14 2m | TP15 1m | TP15 2m | TP16 1m | TP16 2m | TP17 1m | TP17 2m | TP18 1m | TP18 2m | TP19 1m | TP19 2m | TP20 1m | TP20 2m | TP21 1m | TP21 2m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 |
| | | | | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil |
| **Analyte Name** | **Units** | | | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| Benzene | mg/kg | NA | 0.5 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | NA | 65 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | NA | 25 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Total Xylenes | mg/kg | NA | 15 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| TRH C10-C36 To | mg/kg | 250 | 500 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | <110 |
| Benzo(a)pyrene | mg/kg | 0.5 | 1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Total PAH | mg/kg | 20 | 40 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| pH | No unit | 5 to 9 | 4.5 to 10 | **5.9** | **6.0** | **5.8** | **5.8** | **5.6** | **5.1** | **6.1** | **6.5** | **6.6** | **6.8** | **6.7** | **6.9** | **6.6** | **4.9** | **4.5** | **5.8** | **5.9** |
| Conductivity | dS/m | 1.5 | 3 | **0.01** | **0.01** | **0.01** | **0.01** | **0.01** | **0.04** | **0.01** | **0.02** | **0.02** | **0.02** | **0.04** | **0.04** | **0.02** | **0.01** | **0.02** | **0.01** | **0.01** |
| Arsenic | mg/kg | 20 | 40 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 |
| Cadmium | mg/kg | 0.5 | 1 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium | mg/kg | 75 | 150 | **1.2** | **1.1** | **1.1** | **1.3** | **1.2** | **1.1** | **1.6** | **1.4** | **0.8** | **2.5** | **6.1** | **4.6** | **1.9** | **1.0** | **1.8** | **1.3** | **1.4** |
| Copper | mg/kg | 100 | 200 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | **0.5** | **1.3** | **5.9** | **1.3** | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead | mg/kg | 50 | 100 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | **1** | <1 | **1** | **4** | **7** | **2** | <1 | <1 | <1 | <1 |
| Nickel | mg/kg | 30 | 60 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | **0.6** | **3.3** | **0.9** | <0.5 | <0.5 | <0.5 | <0.5 |
| Zinc | mg/kg | 150 | 300 | **1.7** | **1.4** | **1.2** | **1.5** | **1.2** | **1.3** | **0.7** | **50** | **12** | **24** | **50** | **140** | **29** | **1.0** | **1.8** | **2.4** | **1.1** |
| Mercury | mg/kg | 0.5 | 1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Rubber, plastic, bitumen, paper, cloth, paint and wood | % | 0.05 | 0% | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

**TABLE 2**
**Midal Cables International P/L**
**Excavated Natural Material Assessment**

8 April 2013

| | | Maximum average concentration for characterisation | Absolute maximum concentration | TP22 1m | TP22 2m | TP23 1m | TP23 2m | TP24 1m | TP24 2m | QC5 | %RPD | TP25 1m | TP25 2m | TP26 1m | QC7 | %RPD | TP26 2m | TP27 1m | TP27 2m | TP31 3m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 9/1/2013 | | 8/1/2013 | 8/1/2013 | 8/1/2013 | 9/1/2013 | | 8/1/2013 | 8/1/2013 | 8/1/2013 | 12/3/2301 |
| | | | | Soil | Soil | Soil | Soil | Soil | Soil | Soil | | Soil | Soil | Soil | Soil | | Soil | Soil | Soil | Soil |
| **Analyte Name** | **Units** | | | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | | **Result** | **Result** | **Result** | **Result** | | **Result** | **Result** | **Result** | **Result** |
| Benzene | mg/kg | NA | 0.5 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | NA | 65 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | NA | 25 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Total Xylenes | mg/kg | NA | 15 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | | <0.3 | <0.3 | <0.3 | <0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| TRH C10-C36 To | mg/kg | 250 | 500 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | | <110 | <110 | <110 | <110 | | <110 | <110 | <110 | <110 |
| Benzo(a)pyrene | mg/kg | 0.5 | 1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Total PAH | mg/kg | 20 | 40 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | | <0.8 | <0.8 | <0.8 | <0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| pH | No unit | 5 to 9 | 4.5 to 10 | **5.8** | **6.1** | **6.3** | **6.0** | **6.3** | **6.4** | **7.4** | **14%** | **6.7** | **6.7** | **5.7** | **6.3** | **10%** | **5.7** | **6.4** | **5.3** | **7.2** |
| Conductivity | dS/m | 1.5 | 3 | **0.01** | **0.02** | **0.03** | **0.02** | **0.12** | **0.01** | **0.01** | **0%** | **0.03** | **0.02** | **0.01** | **0.01** | **0%** | **0.01** | **0.02** | **0.01** | **0.03** |
| Arsenic | mg/kg | 20 | 40 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | | <3 | <3 | <3 | <3 | | <3 | <3 | <3 | <3 |
| Cadmium | mg/kg | 0.5 | 1 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | | <0.3 | <0.3 | <0.3 | <0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium | mg/kg | 75 | 150 | **0.7** | **2.0** | **2.4** | **2.0** | **1.6** | **1.9** | **1.5** | **24%** | **1.7** | **1.7** | **1.6** | **1.7** | **6%** | **1.1** | **1.7** | **1.4** | **3.0** |
| Copper | mg/kg | 100 | 200 | <0.5 | **1.1** | **1.4** | <0.5 | **1.0** | <0.5 | <0.5 | | <0.5 | **1.1** | <0.5 | <0.5 | | <0.5 | <0.5 | <0.5 | 1 |
| Lead | mg/kg | 50 | 100 | <1 | **2** | **3** | **1** | **2** | **1** | <1 | | <1 | **2** | <1 | <1 | | <1 | <1 | <1 | 2 |
| Nickel | mg/kg | 30 | 60 | <0.5 | **0.5** | **1.0** | **0.6** | <0.5 | **0.6** | **0.6** | **0%** | **0.7** | <0.5 | **0.6** | **0.6** | **0%** | <0.5 | **0.8** | <0.5 | **0.8** |
| Zinc | mg/kg | 150 | 300 | **1.8** | **42** | **120** | **12** | **21** | **13** | **1.7** | **154%** | **7.4** | **30** | **3.3** | **2.4** | **32%** | **7.9** | **8.0** | **6.6** | **66.0** |
| Mercury | mg/kg | 0.5 | 1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | <0.05 | <0.05 | <0.05 | <0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| Rubber, plastic, bitumen, paper, cloth, paint and wood | % | 0.05 | 0% | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 |

**TABLE 2**
**Midal Cables International P/L**
**Excavated Natural Material Assessment**

8 April 2013

| | | Maximum average concentration for characterisation | Absolute maximum concentration | TP28 1m | TP28 2m | TP29 1m | TP29 2m | TP30 1m | TP30 2m | TP31 1m | QC6 | %RPD | TP31 2m | TP32 1m | TP32 2m | TP33 1m | QC8 | %RPD | TP33 2m | TP34 1m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 8/1/2013 | 9/1/2013 | 9/1/2013 | | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | | 9/1/2013 | 9/1/2013 |
| | | | | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | | Soil | Soil | Soil | Soil | Soil | | Soil | Soil |
| **Analyte Name** | **Units** | | | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | | **Result** | **Result** | **Result** | **Result** | **Result** | | **Result** | **Result** |
| Benzene | mg/kg | NA | 0.5 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 |
| Toluene | mg/kg | NA | 65 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | NA | 25 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 |
| Total Xylenes | mg/kg | NA | 15 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | | <0.3 | <0.3 |
| TRH C10-C36 To | mg/kg | 250 | 500 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | <110 | | <110 | <110 | <110 | <110 | <110 | | <110 | **740** |
| Benzo(a)pyrene | mg/kg | 0.5 | 1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 |
| Total PAH | mg/kg | 20 | 40 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | | <0.8 | <0.8 |
| pH | No unit | 5 to 9 | 4.5 to 10 | **6.0** | **6.2** | **6.0** | **5.9** | **6.2** | **6.5** | **6.7** | **7.0** | **4%** | **6.8** | **6.0** | **5.8** | **6.4** | **6.7** | **5%** | **6.5** | **6.4** |
| Conductivity | dS/m | 1.5 | 3 | **0.01** | **0.01** | **0.02** | **0.02** | **0.02** | **0.02** | **0.03** | **0.02** | **20%** | **0.02** | **0.02** | **0.02** | **0.03** | **0.02** | **13%** | **0.01** | **0.03** |
| Arsenic | mg/kg | 20 | 40 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | | <3 | <3 | <3 | <3 | <3 | | <3 | <3 |
| Cadmium | mg/kg | 0.5 | 1 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | | <0.3 | <0.3 |
| Chromium | mg/kg | 75 | 150 | **1.9** | **1.7** | **2.5** | **2.7** | **2.4** | **1.5** | **2.2** | **2.2** | **0%** | **2.3** | **2.0** | **1.3** | **2.1** | **2.8** | **29%** | **2.7** | **4.1** |
| Copper | mg/kg | 100 | 200 | <0.5 | <0.5 | <0.5 | **1.8** | <0.5 | <0.5 | <0.5 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | **0.6** | **1.2** |
| Lead | mg/kg | 50 | 100 | **1** | **1** | <1 | **3** | **1** | <1 | <1 | <1 | | <1 | <1 | <1 | <1 | **1** | **0%** | **2** | **5** |
| Nickel | mg/kg | 30 | 60 | **0.6** | <0.5 | **0.8** | **0.6** | **0.6** | <0.5 | <0.5 | <0.5 | | **0.5** | <0.5 | <0.5 | <0.5 | <0.5 | | **0.6** | **0.6** |
| Zinc | mg/kg | 150 | 300 | **56** | **34** | **35** | **140** | **24** | **24** | **34** | **17** | **67%** | **3.5** | **1.6** | **4.8** | **92** | **19** | **132%** | **190** | **660** |
| Mercury | mg/kg | 0.5 | 1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | <0.05 | <0.05 |
| Rubber, plastic, bitumen, paper, cloth, paint and wood | % | 0.05 | 0% | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |

**TABLE 2**
**Midal Cables International P/L**
**Excavated Natural Material Assessment**

8 April 2013

| | | Maximum average concentration for | Absolute maximum concentration | TP34 2m | TP35 1m | TP35 2m |
|---|---|---|---|---|---|---|
| | | | | 9/1/2013 | 9/1/2013 | 9/1/2013 |
| | | | | Soil | Soil | Soil |
| **Analyte Name** | **Units** | | | **Result** | **Result** | **Result** |
| Benzene | mg/kg | NA | 0.5 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | NA | 65 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | NA | 25 | <0.1 | <0.1 | <0.1 |
| Total Xylenes | mg/kg | NA | 15 | <0.3 | <0.3 | <0.3 |
| TRH C10-C36 To | mg/kg | 250 | 500 | **1900** | <110 | <110 |
| Benzo(a)pyrene | mg/kg | 0.5 | 1 | <0.1 | <0.1 | <0.1 |
| Total PAH | mg/kg | 20 | 40 | <0.8 | <0.8 | <0.8 |
| pH | No unit | 5 to 9 | 4.5 to 10 | **6.3** | **6.2** | **7.5** |
| Conductivity | dS/m | 1.5 | 3 | **0.01** | **0.01** | **0.06** |
| Arsenic | mg/kg | 20 | 40 | <3 | <3 | <3 |
| Cadmium | mg/kg | 0.5 | 1 | <0.3 | <0.3 | <0.3 |
| Chromium | mg/kg | 75 | 150 | **1.3** | **1.4** | **2.4** |
| Copper | mg/kg | 100 | 200 | <0.5 | <0.5 | **3.4** |
| Lead | mg/kg | 50 | 100 | <1 | <1 | **6** |
| Nickel | mg/kg | 30 | 60 | <0.5 | <0.5 | **0.7** |
| Zinc | mg/kg | 150 | 300 | **13** | **2.1** | **110** |
| Mercury | mg/kg | 0.5 | 1 | <0.05 | <0.05 | <0.05 |
| Rubber, plastic, bitumen, paper, cloth, paint and wood | % | 0.05 | 0% | 0.0 | 0.0 | 0.0 |

# ANALYTICAL REPORT

WORLD RECOGNISED ACCREDITATION

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | MB Engineering Solutions |
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| Telephone | 0427 893 668 |
| Facsimile | +61 2 4913 5372 |
| Email | james@mbengineering.com.au |
| Project | **MBE2017** |
| Order Number | **MBE2017** |
| Samples | 77 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE114571 R0** |
| Report Number | 0000048699 |
| Date Reported | 17 Jan 2013 |
| Date Received | 10 Jan 2013 |

## COMMENTS

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

## SIGNATORIES

Andy Sutton
Organics Chemist

Dong Liang
Inorganics Metals Team Leader

Kamrul Ahsan
Metals Chemist

Ly Kim Ha
Organics Supervisor

Snezana Kostoska
Inorganics Chemist

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.001<br>Soil<br>09 Jan 2013<br>TP1 1m | SE114571.002<br>Soil<br>09 Jan 2013<br>TP1 2m | SE114571.003<br>Soil<br>09 Jan 2013<br>TP2 1m | SE114571.004<br>Soil<br>09 Jan 2013<br>TP2 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **83** | **93** | **92** | **96** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **94** | **99** | **101** | **103** |
| d8-toluene (Surrogate) | % | - | **87** | **93** | **91** | **97** |
| Bromofluorobenzene (Surrogate) | % | - | **101** | **99** | **92** | **104** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.001<br>Soil<br>09 Jan 2013<br>TP1 1m | SE114571.002<br>Soil<br>09 Jan 2013<br>TP1 2m | SE114571.003<br>Soil<br>09 Jan 2013<br>TP2 1m | SE114571.004<br>Soil<br>09 Jan 2013<br>TP2 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **120** | **106** | **112** | **110** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **112** | **98** | **106** | **102** |
| d14-p-terphenyl (Surrogate) | % | - | | **120** | **108** | **112** | **114** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.8** | **6.2** | **5.2** | **6.5** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.001<br>Soil<br>09 Jan 2013<br>TP1 1m | SE114571.002<br>Soil<br>09 Jan 2013<br>TP1 2m | SE114571.003<br>Soil<br>09 Jan 2013<br>TP2 1m | SE114571.004<br>Soil<br>09 Jan 2013<br>TP2 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **19** | **18** | **21** | **22** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **2.1** | **1.9** | **1.1** | **1.8** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | <1 | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **0.8** | **0.6** | **1.3** | **7.6** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **3.3** | **2.4** | **3.0** | **3.0** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.005<br>Soil<br>09 Jan 2013<br>TP3 1m | SE114571.006<br>Soil<br>09 Jan 2013<br>TP3 2m | SE114571.007<br>Soil<br>09 Jan 2013<br>TP4 1m | SE114571.008<br>Soil<br>09 Jan 2013<br>TP4 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **93** | **80** | **88** | **99** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **95** | **83** | **102** | **107** |
| d8-toluene (Surrogate) | % | - | **87** | **72** | **86** | **97** |
| Bromofluorobenzene (Surrogate) | % | - | **94** | **83** | **95** | **101** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.005<br>Soil<br>09 Jan 2013<br>TP3 1m | SE114571.006<br>Soil<br>09 Jan 2013<br>TP3 2m | SE114571.007<br>Soil<br>09 Jan 2013<br>TP4 1m | SE114571.008<br>Soil<br>09 Jan 2013<br>TP4 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **108** | **110** | **104** | **108** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **100** | **100** | **98** | **102** |
| d14-p-terphenyl (Surrogate) | % | - | | **112** | **114** | **112** | **114** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.3** | **6.4** | **6.1** | **5.9** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.005<br>Soil<br>09 Jan 2013<br>TP3 1m | SE114571.006<br>Soil<br>09 Jan 2013<br>TP3 2m | SE114571.007<br>Soil<br>09 Jan 2013<br>TP4 1m | SE114571.008<br>Soil<br>09 Jan 2013<br>TP4 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **24** | **14** | **10** | **6** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.5** | **1.1** | **1.1** | **1.1** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | <1 | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **3.5** | **1.8** | **1.4** | **1.3** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **3.8** | **4.9** | **3.5** | **4.3** |

| Parameter | Units | LOR | Sample Number: SE114571.009<br>Sample Matrix: Soil<br>Sample Date: 09 Jan 2013<br>Sample Name: TP5 1m | SE114571.010<br>Soil<br>09 Jan 2013<br>TP5 2m | SE114571.011<br>Soil<br>09 Jan 2013<br>TP6 1m | SE114571.012<br>Soil<br>09 Jan 2013<br>TP6 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **88** | **106** | **96** | **96** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **94** | **109** | **99** | **102** |
| d8-toluene (Surrogate) | % | - | **86** | **99** | **92** | **89** |
| Bromofluorobenzene (Surrogate) | % | - | **97** | **101** | **99** | **96** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.009<br>Soil<br>09 Jan 2013<br>TP5 1m | SE114571.010<br>Soil<br>09 Jan 2013<br>TP5 2m | SE114571.011<br>Soil<br>09 Jan 2013<br>TP6 1m | SE114571.012<br>Soil<br>09 Jan 2013<br>TP6 2m |
|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **112** | **104** | **104** | **104** |
| 2-fluorobiphenyl (Surrogate) | % | - | **106** | **100** | **100** | **98** |
| d14-p-terphenyl (Surrogate) | % | - | **118** | **116** | **116** | **112** |
| **pH in soil (1:5) Method: AN101** | | | | | | |
| pH | No unit | - | **5.9** | **6.0** | **6.6** | **6.3** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.009<br>Soil<br>09 Jan 2013<br>TP5 1m | SE114571.010<br>Soil<br>09 Jan 2013<br>TP5 2m | SE114571.011<br>Soil<br>09 Jan 2013<br>TP6 1m | SE114571.012<br>Soil<br>09 Jan 2013<br>TP6 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **14** | **16** | **14** | **13** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.6** | **0.7** | **1.5** | **1.0** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | **1** | <1 | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **6.1** | **4.8** | **1.1** | **23** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **4.3** | **3.2** | **4.1** | **4.3** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.013<br>Soil<br>09 Jan 2013<br>TP7 1m | SE114571.014<br>Soil<br>09 Jan 2013<br>TP7 2m | SE114571.015<br>Soil<br>09 Jan 2013<br>TP8 1m | SE114571.016<br>Soil<br>09 Jan 2013<br>TP8 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **92** | **82** | **94** | **103** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **99** | **92** | **111** | **109** |
| d8-toluene (Surrogate) | % | - | **84** | **73** | **78** | **91** |
| Bromofluorobenzene (Surrogate) | % | - | **93** | **82** | **104** | **106** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.013<br>Soil<br>09 Jan 2013<br>TP7 1m | SE114571.014<br>Soil<br>09 Jan 2013<br>TP7 2m | SE114571.015<br>Soil<br>09 Jan 2013<br>TP8 1m | SE114571.016<br>Soil<br>09 Jan 2013<br>TP8 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **108** | **104** | **108** | **106** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **102** | **100** | **100** | **102** |
| d14-p-terphenyl (Surrogate) | % | - | | **114** | **112** | **114** | **112** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.8** | **6.2** | **6.7** | **6.3** |

| Parameter | Units | LOR | Sample Number: SE114571.013<br>Sample Matrix: Soil<br>Sample Date: 09 Jan 2013<br>Sample Name: TP7 1m | SE114571.014<br>Soil<br>09 Jan 2013<br>TP7 2m | SE114571.015<br>Soil<br>09 Jan 2013<br>TP8 1m | SE114571.016<br>Soil<br>09 Jan 2013<br>TP8 2m |
|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | **34** | **24** | **8** | **5** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | |
| Arsenic, As | mg/kg | 3 | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **17** | **9.1** | **1.8** | **2.0** |
| Copper, Cu | mg/kg | 0.5 | **9.7** | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | **12** | **3** | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | **4.3** | **0.6** | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | **170** | **3.9** | **2.7** | **0.7** |
| **Mercury in Soil Method: AN312** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | |
| % Moisture | % | 0.5 | **7.8** | **23** | **5.5** | **4.5** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.017<br>Soil<br>09 Jan 2013<br>TP9 1m | SE114571.018<br>Soil<br>09 Jan 2013<br>TP9 2m | SE114571.019<br>Soil<br>09 Jan 2013<br>TP10 1m | SE114571.020<br>Soil<br>09 Jan 2013<br>TP10 2m |
|---|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Benzene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | | **99** | **96** | **85** | **89** |
| d4-1,2-dichloroethane (Surrogate) | % | - | | **111** | **104** | **95** | **106** |
| d8-toluene (Surrogate) | % | - | | **88** | **85** | **74** | **81** |
| Bromofluorobenzene (Surrogate) | % | - | | **97** | **95** | **76** | **96** |
| Totals | | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | | |
| TRH C10-C14 | mg/kg | 20 | | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.017<br>Soil<br>09 Jan 2013<br>TP9 1m | SE114571.018<br>Soil<br>09 Jan 2013<br>TP9 2m | SE114571.019<br>Soil<br>09 Jan 2013<br>TP10 1m | SE114571.020<br>Soil<br>09 Jan 2013<br>TP10 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **96** | **84** | **102** | **100** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **92** | **86** | **96** | **94** |
| d14-p-terphenyl (Surrogate) | % | - | | **112** | **104** | **104** | **108** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **7.1** | **5.8** | **4.7** | **5.6** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.017<br>Soil<br>09 Jan 2013<br>TP9 1m | SE114571.018<br>Soil<br>09 Jan 2013<br>TP9 2m | SE114571.019<br>Soil<br>09 Jan 2013<br>TP10 1m | SE114571.020<br>Soil<br>09 Jan 2013<br>TP10 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **16** | **8** | **24** | **26** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.4** | **1.8** | **2.3** | **2.2** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | <1 | <1 | **1** |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | **0.6** |
| Zinc, Zn | mg/kg | 0.5 | | **1.4** | **3.1** | **12** | **25** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **21** | **22** | **4.0** | **4.7** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.021<br>Soil<br>09 Jan 2013<br>TP11 1m | SE114571.022<br>Soil<br>09 Jan 2013<br>TP11 2m | SE114571.023<br>Soil<br>09 Jan 2013<br>TP12 1m | SE114571.024<br>Soil<br>09 Jan 2013<br>TP12 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **99** | **91** | **85** | **79** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **108** | **97** | **97** | **87** |
| d8-toluene (Surrogate) | % | - | **97** | **79** | **74** | **73** |
| Bromofluorobenzene (Surrogate) | % | - | **105** | **88** | **84** | **98** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.021<br>Soil<br>09 Jan 2013<br>TP11 1m | SE114571.022<br>Soil<br>09 Jan 2013<br>TP11 2m | SE114571.023<br>Soil<br>09 Jan 2013<br>TP12 1m | SE114571.024<br>Soil<br>09 Jan 2013<br>TP12 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **100** | **102** | **106** | **100** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **98** | **94** | **98** | **94** |
| d14-p-terphenyl (Surrogate) | % | - | | **110** | **108** | **110** | **106** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **7.6** | **8.2** | **6.4** | **6.6** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.021<br>Soil<br>09 Jan 2013<br>TP11 1m | SE114571.022<br>Soil<br>09 Jan 2013<br>TP11 2m | SE114571.023<br>Soil<br>09 Jan 2013<br>TP12 1m | SE114571.024<br>Soil<br>09 Jan 2013<br>TP12 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **35** | **43** | **13** | **17** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **2.3** | **2.7** | **1.6** | **1.1** |
| Copper, Cu | mg/kg | 0.5 | | **1.5** | **2.6** | **0.5** | <0.5 |
| Lead, Pb | mg/kg | 1 | | **2** | **3** | **1** | <1 |
| Nickel, Ni | mg/kg | 0.5 | | **0.9** | **1.5** | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **46** | **67** | **6.0** | **1.5** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **5.1** | **4.3** | **5.4** | **14** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.025<br>Soil<br>09 Jan 2013<br>TP13 1m | SE114571.026<br>Soil<br>09 Jan 2013<br>TP13 2m | SE114571.027<br>Soil<br>09 Jan 2013<br>TP14 1m | SE114571.028<br>Soil<br>09 Jan 2013<br>TP14 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **84** | **87** | **102** | **87** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **85** | **97** | **109** | **93** |
| d8-toluene (Surrogate) | % | - | **71** | **79** | **88** | **105** |
| Bromofluorobenzene (Surrogate) | % | - | **78** | **80** | **84** | **87** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.025<br>Soil<br>09 Jan 2013<br>TP13 1m | SE114571.026<br>Soil<br>09 Jan 2013<br>TP13 2m | SE114571.027<br>Soil<br>09 Jan 2013<br>TP14 1m | SE114571.028<br>Soil<br>09 Jan 2013<br>TP14 2m |
|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **104** | **102** | **102** | **102** |
| 2-fluorobiphenyl (Surrogate) | % | - | **98** | **98** | **96** | **94** |
| d14-p-terphenyl (Surrogate) | % | - | **112** | **110** | **110** | **108** |
| **pH in soil (1:5) Method: AN101** | | | | | | |
| pH | No unit | - | **5.9** | **5.9** | **6.0** | **5.8** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.025<br>Soil<br>09 Jan 2013<br>TP13 1m | SE114571.026<br>Soil<br>09 Jan 2013<br>TP13 2m | SE114571.027<br>Soil<br>09 Jan 2013<br>TP14 1m | SE114571.028<br>Soil<br>09 Jan 2013<br>TP14 2m |
|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | **12** | **11** | **12** | **11** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | |
| Arsenic, As | mg/kg | 3 | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **1.2** | **1.2** | **1.1** | **1.1** |
| Copper, Cu | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | <1 | <1 | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | **2.0** | **1.7** | **1.4** | **1.2** |
| **Mercury in Soil Method: AN312** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | |
| % Moisture | % | 0.5 | **3.9** | **5.9** | **3.3** | **4.6** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.029<br>Soil<br>09 Jan 2013<br>TP15 1m | SE114571.030<br>Soil<br>09 Jan 2013<br>TP15 2m | SE114571.031<br>Soil<br>09 Jan 2013<br>TP16 1m | SE114571.032<br>Soil<br>09 Jan 2013<br>TP16 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **90** | **87** | **89** | **108** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **98** | **99** | **106** | **114** |
| d8-toluene (Surrogate) | % | - | **73** | **73** | **90** | **100** |
| Bromofluorobenzene (Surrogate) | % | - | **72** | **77** | **88** | **106** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.029<br>Soil<br>09 Jan 2013<br>TP15 1m | SE114571.030<br>Soil<br>09 Jan 2013<br>TP15 2m | SE114571.031<br>Soil<br>09 Jan 2013<br>TP16 1m | SE114571.032<br>Soil<br>09 Jan 2013<br>TP16 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **100** | **100** | **96** | **104** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **96** | **96** | **94** | **96** |
| d14-p-terphenyl (Surrogate) | % | - | | **110** | **110** | **112** | **108** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **5.8** | **5.6** | **5.1** | **6.1** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.029<br>Soil<br>09 Jan 2013<br>TP15 1m | SE114571.030<br>Soil<br>09 Jan 2013<br>TP15 2m | SE114571.031<br>Soil<br>09 Jan 2013<br>TP16 1m | SE114571.032<br>Soil<br>09 Jan 2013<br>TP16 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **9** | **6** | **37** | **6** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.3** | **1.2** | **1.1** | **1.6** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | <1 | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **1.5** | **1.2** | **1.3** | **0.7** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **6.1** | **6.3** | **3.2** | **6.6** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.033<br>Soil<br>09 Jan 2013<br>TP17 1m | SE114571.034<br>Soil<br>09 Jan 2013<br>TP17 2m | SE114571.035<br>Soil<br>09 Jan 2013<br>TP18 1m | SE114571.036<br>Soil<br>09 Jan 2013<br>TP18 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **89** | **85** | **92** | **85** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **97** | **94** | **102** | **94** |
| d8-toluene (Surrogate) | % | - | **84** | **77** | **81** | **76** |
| Bromofluorobenzene (Surrogate) | % | - | **89** | **82** | **93** | **77** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.033<br>Soil<br>09 Jan 2013<br>TP17 1m | SE114571.034<br>Soil<br>09 Jan 2013<br>TP17 2m | SE114571.035<br>Soil<br>09 Jan 2013<br>TP18 1m | SE114571.036<br>Soil<br>09 Jan 2013<br>TP18 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **106** | **104** | **102** | **100** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **98** | **98** | **94** | **96** |
| d14-p-terphenyl (Surrogate) | % | - | | **114** | **116** | **110** | **114** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.5** | **6.6** | **6.8** | **6.7** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.033<br>Soil<br>09 Jan 2013<br>TP17 1m | SE114571.034<br>Soil<br>09 Jan 2013<br>TP17 2m | SE114571.035<br>Soil<br>09 Jan 2013<br>TP18 1m | SE114571.036<br>Soil<br>09 Jan 2013<br>TP18 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **15** | **18** | **24** | **35** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.4** | **0.8** | **2.5** | **6.1** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | **0.5** | **1.3** |
| Lead, Pb | mg/kg | 1 | | **1** | <1 | **1** | **4** |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | **0.6** |
| Zinc, Zn | mg/kg | 0.5 | | **50** | **12** | **24** | **50** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **5.5** | **8.5** | **5.3** | **16** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.037<br>Soil<br>09 Jan 2013<br>TP19 1m | SE114571.038<br>Soil<br>09 Jan 2013<br>TP19 2m | SE114571.039<br>Soil<br>09 Jan 2013<br>TP20 1m | SE114571.040<br>Soil<br>09 Jan 2013<br>TP20 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **88** | **103** | **90** | **91** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **95** | **109** | **98** | **91** |
| d8-toluene (Surrogate) | % | - | **82** | **90** | **83** | **71** |
| Bromofluorobenzene (Surrogate) | % | - | **92** | **96** | **99** | **78** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.037<br>Soil<br>09 Jan 2013<br>TP19 1m | SE114571.038<br>Soil<br>09 Jan 2013<br>TP19 2m | SE114571.039<br>Soil<br>09 Jan 2013<br>TP20 1m | SE114571.040<br>Soil<br>09 Jan 2013<br>TP20 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **108** | **106** | **83** | **92** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **100** | **98** | **78** | **88** |
| d14-p-terphenyl (Surrogate) | % | - | | **108** | **112** | **91** | **102** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.9** | **6.6** | **4.9** | **4.5** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.037<br>Soil<br>09 Jan 2013<br>TP19 1m | SE114571.038<br>Soil<br>09 Jan 2013<br>TP19 2m | SE114571.039<br>Soil<br>09 Jan 2013<br>TP20 1m | SE114571.040<br>Soil<br>09 Jan 2013<br>TP20 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **38** | **23** | **7** | **20** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **4.6** | **1.9** | **1.0** | **1.8** |
| Copper, Cu | mg/kg | 0.5 | | **5.9** | **1.3** | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | **7** | **2** | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | **3.3** | **0.9** | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **140** | **29** | **1.0** | **1.8** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **5.5** | **10** | **2.1** | **2.6** |

| Parameter | Units | LOR | Sample Number: SE114571.041<br>Sample Matrix: Soil<br>Sample Date: 09 Jan 2013<br>Sample Name: TP21 1m | SE114571.042<br>Soil<br>09 Jan 2013<br>TP21 2m | SE114571.043<br>Soil<br>09 Jan 2013<br>TP22 1m | SE114571.044<br>Soil<br>09 Jan 2013<br>TP22 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **89** | **78** | **79** | **81** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **92** | **80** | **78** | **83** |
| d8-toluene (Surrogate) | % | - | **93** | **84** | **84** | **85** |
| Bromofluorobenzene (Surrogate) | % | - | **97** | **83** | **81** | **80** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.041<br>Soil<br>09 Jan 2013<br>TP21 1m | SE114571.042<br>Soil<br>09 Jan 2013<br>TP21 2m | SE114571.043<br>Soil<br>09 Jan 2013<br>TP22 1m | SE114571.044<br>Soil<br>09 Jan 2013<br>TP22 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **96** | **100** | **98** | **98** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **86** | **90** | **90** | **92** |
| d14-p-terphenyl (Surrogate) | % | - | | **98** | **102** | **104** | **106** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **5.8** | **5.9** | **5.8** | **6.1** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.041<br>Soil<br>09 Jan 2013<br>TP21 1m | SE114571.042<br>Soil<br>09 Jan 2013<br>TP21 2m | SE114571.043<br>Soil<br>09 Jan 2013<br>TP22 1m | SE114571.044<br>Soil<br>09 Jan 2013<br>TP22 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **10** | **8** | **13** | **19** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.3** | **1.4** | **0.7** | **2.0** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | **1.1** |
| Lead, Pb | mg/kg | 1 | | <1 | <1 | <1 | **2** |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | **0.5** |
| Zinc, Zn | mg/kg | 0.5 | | **2.4** | **1.1** | **1.8** | **42** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **6.6** | **4.8** | **3.6** | **4.6** |

| Parameter | Units | LOR | Sample Number SE114571.045 Sample Matrix Soil Sample Date 09 Jan 2013 Sample Name TP23 1m | SE114571.046 Soil 09 Jan 2013 TP23 2m | SE114571.047 Soil 09 Jan 2013 TP24 1m | SE114571.048 Soil 09 Jan 2013 TP24 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **103** | **82** | **93** | **88** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **103** | **84** | **93** | **87** |
| d8-toluene (Surrogate) | % | - | **111** | **85** | **101** | **93** |
| Bromofluorobenzene (Surrogate) | % | - | **106** | **86** | **95** | **88** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.045<br>Soil<br>09 Jan 2013<br>TP23 1m | SE114571.046<br>Soil<br>09 Jan 2013<br>TP23 2m | SE114571.047<br>Soil<br>09 Jan 2013<br>TP24 1m | SE114571.048<br>Soil<br>09 Jan 2013<br>TP24 2m |
|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **98** | **94** | **98** | **94** |
| 2-fluorobiphenyl (Surrogate) | % | - | **90** | **88** | **90** | **88** |
| d14-p-terphenyl (Surrogate) | % | - | **102** | **100** | **104** | **100** |
| **pH in soil (1:5) Method: AN101** | | | | | | |
| pH | No unit | - | **6.3** | **6.0** | **6.3** | **6.4** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.045<br>Soil<br>09 Jan 2013<br>TP23 1m | SE114571.046<br>Soil<br>09 Jan 2013<br>TP23 2m | SE114571.047<br>Soil<br>09 Jan 2013<br>TP24 1m | SE114571.048<br>Soil<br>09 Jan 2013<br>TP24 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **26** | **21** | **12** | **11** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **2.4** | **2.0** | **1.6** | **1.9** |
| Copper, Cu | mg/kg | 0.5 | | **1.4** | <0.5 | **1.0** | <0.5 |
| Lead, Pb | mg/kg | 1 | | **3** | **1** | **2** | **1** |
| Nickel, Ni | mg/kg | 0.5 | | **1.0** | **0.6** | <0.5 | **0.6** |
| Zinc, Zn | mg/kg | 0.5 | | **120** | **12** | **21** | **13** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **3.3** | **21** | **3.2** | **16** |

| Parameter | Units | LOR | Sample Number: SE114571.049<br>Sample Matrix: Soil<br>Sample Date: 09 Jan 2013<br>Sample Name: TP25 1m | SE114571.050<br>Soil<br>09 Jan 2013<br>TP25 2m | SE114571.051<br>Soil<br>09 Jan 2013<br>TP26 1m | SE114571.052<br>Soil<br>09 Jan 2013<br>TP26 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **89** | **90** | **92** | **86** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **89** | **92** | **93** | **88** |
| d8-toluene (Surrogate) | % | - | **94** | **96** | **97** | **86** |
| Bromofluorobenzene (Surrogate) | % | - | **89** | **88** | **93** | **84** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.049<br>Soil<br>09 Jan 2013<br>TP25 1m | SE114571.050<br>Soil<br>09 Jan 2013<br>TP25 2m | SE114571.051<br>Soil<br>09 Jan 2013<br>TP26 1m | SE114571.052<br>Soil<br>09 Jan 2013<br>TP26 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **96** | **98** | **96** | **96** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **90** | **92** | **90** | **88** |
| d14-p-terphenyl (Surrogate) | % | - | | **104** | **108** | **102** | **104** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.7** | **6.7** | **5.7** | **5.7** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.049<br>Soil<br>09 Jan 2013<br>TP25 1m | SE114571.050<br>Soil<br>09 Jan 2013<br>TP25 2m | SE114571.051<br>Soil<br>09 Jan 2013<br>TP26 1m | SE114571.052<br>Soil<br>09 Jan 2013<br>TP26 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **25** | **22** | **12** | **10** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.7** | **1.7** | **1.6** | **1.1** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | **1.1** | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | **2** | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | **0.7** | <0.5 | **0.6** | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **7.4** | **30** | **3.3** | **7.9** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **4.0** | **19** | **4.4** | **9.3** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.053<br>Soil<br>09 Jan 2013<br>TP27 1m | SE114571.054<br>Soil<br>09 Jan 2013<br>TP27 2m | SE114571.055<br>Soil<br>09 Jan 2013<br>TP28 1m | SE114571.056<br>Soil<br>09 Jan 2013<br>TP28 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **93** | **91** | **86** | **82** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **94** | **90** | **88** | **89** |
| d8-toluene (Surrogate) | % | - | **98** | **92** | **88** | **78** |
| Bromofluorobenzene (Surrogate) | % | - | **92** | **84** | **75** | **71** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.053<br>Soil<br>09 Jan 2013<br>TP27 1m | SE114571.054<br>Soil<br>09 Jan 2013<br>TP27 2m | SE114571.055<br>Soil<br>09 Jan 2013<br>TP28 1m | SE114571.056<br>Soil<br>09 Jan 2013<br>TP28 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **96** | **96** | **112** | **94** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **88** | **90** | **102** | **88** |
| d14-p-terphenyl (Surrogate) | % | - | | **106** | **106** | **118** | **102** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.4** | **5.3** | **6.0** | **6.2** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.053<br>Soil<br>09 Jan 2013<br>TP27 1m | SE114571.054<br>Soil<br>09 Jan 2013<br>TP27 2m | SE114571.055<br>Soil<br>09 Jan 2013<br>TP28 1m | SE114571.056<br>Soil<br>09 Jan 2013<br>TP28 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **23** | **11** | **11** | **14** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.7** | **1.4** | **1.9** | **1.7** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | <1 | **1** | **1** |
| Nickel, Ni | mg/kg | 0.5 | | **0.8** | <0.5 | **0.6** | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **8.0** | **6.6** | **56** | **34** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **4.1** | **22** | **5.3** | **22** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.057<br>Soil<br>09 Jan 2013<br>TP29 1m | SE114571.058<br>Soil<br>09 Jan 2013<br>TP29 2m | SE114571.059<br>Soil<br>09 Jan 2013<br>TP30 1m | SE114571.060<br>Soil<br>09 Jan 2013<br>TP30 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **72** | **88** | **74** | **74** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **76** | **93** | **85** | **81** |
| d8-toluene (Surrogate) | % | - | **75** | **86** | **72** | **71** |
| Bromofluorobenzene (Surrogate) | % | - | **70** | **78** | **72** | **73** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.057<br>Soil<br>09 Jan 2013<br>TP29 1m | SE114571.058<br>Soil<br>09 Jan 2013<br>TP29 2m | SE114571.059<br>Soil<br>09 Jan 2013<br>TP30 1m | SE114571.060<br>Soil<br>09 Jan 2013<br>TP30 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **102** | **90** | **94** | **102** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **94** | **84** | **86** | **94** |
| d14-p-terphenyl (Surrogate) | % | - | | **110** | **98** | **100** | **112** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.0** | **5.9** | **6.2** | **6.5** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.057<br>Soil<br>09 Jan 2013<br>TP29 1m | SE114571.058<br>Soil<br>09 Jan 2013<br>TP29 2m | SE114571.059<br>Soil<br>09 Jan 2013<br>TP30 1m | SE114571.060<br>Soil<br>09 Jan 2013<br>TP30 2m |
|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | **19** | **15** | **22** | **21** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | |
| Arsenic, As | mg/kg | 3 | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **2.5** | **2.7** | **2.4** | **1.5** |
| Copper, Cu | mg/kg | 0.5 | <0.5 | **1.8** | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | <1 | **3** | **1** | <1 |
| Nickel, Ni | mg/kg | 0.5 | **0.8** | **0.6** | **0.6** | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | **35** | **140** | **24** | **24** |
| **Mercury in Soil Method: AN312** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | |
| % Moisture | % | 0.5 | **22** | **22** | **22** | **22** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.061<br>Soil<br>09 Jan 2013<br>TP31 1m | SE114571.062<br>Soil<br>09 Jan 2013<br>TP31 2m | SE114571.063<br>Soil<br>09 Jan 2013<br>TP32 1m | SE114571.064<br>Soil<br>09 Jan 2013<br>TP32 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **88** | **103** | **98** | **95** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **92** | **102** | **104** | **100** |
| d8-toluene (Surrogate) | % | - | **94** | **98** | **89** | **88** |
| Bromofluorobenzene (Surrogate) | % | - | **80** | **97** | **95** | **90** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.061<br>Soil<br>09 Jan 2013<br>TP31 1m | SE114571.062<br>Soil<br>09 Jan 2013<br>TP31 2m | SE114571.063<br>Soil<br>09 Jan 2013<br>TP32 1m | SE114571.064<br>Soil<br>09 Jan 2013<br>TP32 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **84** | **98** | **98** | **92** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **78** | **88** | **90** | **86** |
| d14-p-terphenyl (Surrogate) | % | - | | **82** | **106** | **104** | **100** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.7** | **6.8** | **6.0** | **5.8** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.061<br>Soil<br>09 Jan 2013<br>TP31 1m | SE114571.062<br>Soil<br>09 Jan 2013<br>TP31 2m | SE114571.063<br>Soil<br>09 Jan 2013<br>TP32 1m | SE114571.064<br>Soil<br>09 Jan 2013<br>TP32 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **28** | **17** | **18** | **18** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **2.2** | **2.3** | **2.0** | **1.3** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | <1 | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | **0.5** | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **34** | **3.5** | **1.6** | **4.8** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **3.8** | **5.8** | **2.0** | **2.2** |

| Parameter | Units | LOR | Sample Number: SE114571.065<br>Sample Matrix: Soil<br>Sample Date: 09 Jan 2013<br>Sample Name: TP33 1m | SE114571.066<br>Soil<br>09 Jan 2013<br>TP33 2m | SE114571.067<br>Soil<br>09 Jan 2013<br>TP34 1m | SE114571.068<br>Soil<br>09 Jan 2013<br>TP34 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **90** | **89** | **97** | **94** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **96** | **104** | **103** | **101** |
| d8-toluene (Surrogate) | % | - | **89** | **90** | **98** | **92** |
| Bromofluorobenzene (Surrogate) | % | - | **81** | **83** | **78** | **91** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | **21** | **240** |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | **400** | **1600** |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | **330** | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | **740** | **1900** |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | **750** | **1900** |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | **52** | **490** |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | **580** | **1400** |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.065<br>Soil<br>09 Jan 2013<br>TP33 1m | SE114571.066<br>Soil<br>09 Jan 2013<br>TP33 2m | SE114571.067<br>Soil<br>09 Jan 2013<br>TP34 1m | SE114571.068<br>Soil<br>09 Jan 2013<br>TP34 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **98** | **102** | **100** | **106** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **100** | **94** | **96** | **90** |
| d14-p-terphenyl (Surrogate) | % | - | | **106** | **104** | **104** | **104** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.4** | **6.5** | **6.4** | **6.3** |

| Parameter | Units | LOR | Sample Number: SE114571.065<br>Sample Matrix: Soil<br>Sample Date: 09 Jan 2013<br>Sample Name: TP33 1m | SE114571.066<br>Soil<br>09 Jan 2013<br>TP33 2m | SE114571.067<br>Soil<br>09 Jan 2013<br>TP34 1m | SE114571.068<br>Soil<br>09 Jan 2013<br>TP34 2m |
|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | **25** | **13** | **25** | **7** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | |
| Arsenic, As | mg/kg | 3 | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **2.1** | **2.7** | **4.1** | **1.3** |
| Copper, Cu | mg/kg | 0.5 | <0.5 | **0.6** | **1.2** | <0.5 |
| Lead, Pb | mg/kg | 1 | <1 | **2** | **5** | <1 |
| Nickel, Ni | mg/kg | 0.5 | <0.5 | **0.6** | **0.6** | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | **92** | **190** | **660** | **13** |
| **Mercury in Soil Method: AN312** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | |
| % Moisture | % | 0.5 | **4.5** | **2.9** | **6.1** | **4.9** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.069<br>Soil<br>09 Jan 2013<br>TP35 1m | SE114571.070<br>Soil<br>09 Jan 2013<br>TP35 2m | SE114571.071<br>Soil<br>09 Jan 2013<br>QC5 | SE114571.072<br>Soil<br>09 Jan 2013<br>QC6 |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **90** | **94** | **87** | **97** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **97** | **99** | **101** | **102** |
| d8-toluene (Surrogate) | % | - | **87** | **92** | **94** | **95** |
| Bromofluorobenzene (Surrogate) | % | - | **85** | **89** | **79** | **108** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.069<br>Soil<br>09 Jan 2013<br>TP35 1m | SE114571.070<br>Soil<br>09 Jan 2013<br>TP35 2m | SE114571.071<br>Soil<br>09 Jan 2013<br>QC5 | SE114571.072<br>Soil<br>09 Jan 2013<br>QC6 |
|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **104** | **104** | **104** | **106** |
| 2-fluorobiphenyl (Surrogate) | % | - | **94** | **92** | **92** | **92** |
| d14-p-terphenyl (Surrogate) | % | - | **102** | **104** | **104** | **106** |
| **pH in soil (1:5) Method: AN101** | | | | | | |
| pH | No unit | - | **6.2** | **7.5** | **7.4** | **7.0** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.069<br>Soil<br>09 Jan 2013<br>TP35 1m | SE114571.070<br>Soil<br>09 Jan 2013<br>TP35 2m | SE114571.071<br>Soil<br>09 Jan 2013<br>QC5 | SE114571.072<br>Soil<br>09 Jan 2013<br>QC6 |
|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | **8** | **57** | **11** | **23** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | |
| Arsenic, As | mg/kg | 3 | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **1.4** | **2.4** | **1.5** | **2.2** |
| Copper, Cu | mg/kg | 0.5 | <0.5 | **3.4** | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | <1 | **6** | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | <0.5 | **0.7** | **0.6** | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | **2.1** | **110** | **1.7** | **17** |
| **Mercury in Soil Method: AN312** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | |
| % Moisture | % | 0.5 | **2.8** | **3.8** | **17** | **4.2** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.073<br>Soil<br>09 Jan 2013<br>QC7 | SE114571.074<br>Soil<br>09 Jan 2013<br>QC8 | SE114571.075<br>Soil<br>09 Jan 2013<br>QC9 | SE114571.076<br>Soil<br>09 Jan 2013<br>QC10 |
|---|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Benzene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | | **92** | **95** | **83** | **83** |
| d4-1,2-dichloroethane (Surrogate) | % | - | | **99** | **102** | **90** | **90** |
| d8-toluene (Surrogate) | % | - | | **90** | **97** | **83** | **86** |
| Bromofluorobenzene (Surrogate) | % | - | | **95** | **92** | **87** | **77** |
| Totals | | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | | |
| TRH C10-C14 | mg/kg | 20 | | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number SE114571.073 Sample Matrix Soil Sample Date 09 Jan 2013 Sample Name QC7 | SE114571.074 Soil 09 Jan 2013 QC8 | SE114571.075 Soil 09 Jan 2013 QC9 | SE114571.076 Soil 09 Jan 2013 QC10 |
|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **100** | **100** | **102** | **100** |
| 2-fluorobiphenyl (Surrogate) | % | - | **90** | **90** | **90** | **88** |
| d14-p-terphenyl (Surrogate) | % | - | **104** | **104** | **102** | **102** |
| **pH in soil (1:5) Method: AN101** | | | | | | |
| pH | No unit | - | **6.3** | **6.7** | **6.3** | **6.5** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.073<br>Soil<br>09 Jan 2013<br>QC7 | SE114571.074<br>Soil<br>09 Jan 2013<br>QC8 | SE114571.075<br>Soil<br>09 Jan 2013<br>QC9 | SE114571.076<br>Soil<br>09 Jan 2013<br>QC10 |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **12** | **22** | **22** | **25** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.7** | **2.8** | **2.3** | **1.8** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | **1** | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | **0.6** | <0.5 | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **2.4** | **19** | **1.8** | **9.3** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **2.4** | **4.8** | **2.5** | **5.0** |

| Parameter | Units | LOR | Sample Number SE114571.077<br>Sample Matrix Soil<br>Sample Date 09 Jan 2013<br>Sample Name QC11 |
|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | |
| 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 | mg/kg | 0.1 | <0.1 |
| Surrogates | | | |
| Dibromofluoromethane (Surrogate) | % | - | **97** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **108** |
| d8-toluene (Surrogate) | % | - | **98** |
| Bromofluorobenzene (Surrogate) | % | - | **98** |
| Totals | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | |
| TRH C10-C14 | mg/kg | 20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 |
| TRH F Bands | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 |

| Parameter | Units | LOR | Sample Number SE114571.077<br>Sample Matrix Soil<br>Sample Date 09 Jan 2013<br>Sample Name QC11 |
|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | |
| 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(b)fluoranthene | mg/kg | 0.1 | <0.1 |
| Benzo(k)fluoranthene | 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(a&h)anthracene | mg/kg | 0.1 | <0.1 |
| Benzo(ghi)perylene | mg/kg | 0.1 | <0.1 |
| Total PAH | mg/kg | 0.8 | <0.8 |
| Surrogates | | | |
| d5-nitrobenzene (Surrogate) | % | - | **100** |
| 2-fluorobiphenyl (Surrogate) | % | - | **88** |
| d14-p-terphenyl (Surrogate) | % | - | **102** |
| **pH in soil (1:5) Method: AN101** | | | |
| pH | No unit | - | **6.1** |

| Parameter | Units | LOR | Sample Number SE114571.077<br>Sample Matrix Soil<br>Sample Date 09 Jan 2013<br>Sample Name QC11 |
|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | **14** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | |
| Arsenic, As | mg/kg | 3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **1.7** |
| Copper, Cu | mg/kg | 0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | **4.6** |
| **Mercury in Soil Method: AN312** | | | |
| Mercury | mg/kg | 0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | |
| % Moisture | % | 0.5 | **4.7** |

# QC SUMMARY

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.

**Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|---|
| Conductivity of Extract (1:5 dry sample basis) | LB032116 | µS/cm | 1 | <1 | 10 - 15% | 104% |
| | LB032184 | µS/cm | 1 | <1 | 4 - 6% | 104% |
| | LB032187 | µS/cm | 1 | <1 | 1 - 9% | 104% |
| | LB032189 | µS/cm | 1 | <1 | 4% | 105% |

**Mercury in Soil Method: ME-(AU)-[ENV]AN312**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery | MSD %RPD |
|---|---|---|---|---|---|---|---|---|
| Mercury | LB032162 | mg/kg | 0.05 | <0.05 | 0% | 98% | 95% | |
| | LB032196 | mg/kg | 0.05 | <0.05 | 0% | 95% | 90% | |
| | LB032222 | mg/kg | 0.05 | <0.05 | 0% | 90% | 89% | NA |
| | LB032223 | mg/kg | 0.05 | <0.05 | 0% | 97% | 89% | |
| | LB032224 | mg/kg | 0.05 | <0.05 | 9% | 103% | 93% | |

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Naphthalene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 101% | 109% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 103% | 103% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 111% | 108% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 116% | 114% |
| 2-methylnaphthalene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| 1-methylnaphthalene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Acenaphthylene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 103% | 115% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 104% | 102% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 108% | 109% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 114% | 111% |
| Acenaphthene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 105% | 116% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 107% | 105% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 115% | 113% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 120% | 117% |
| Fluorene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Phenanthrene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 108% | 116% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 112% | 109% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 118% | 114% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 124% | 122% |
| Anthracene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 108% | 115% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 106% | 106% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 117% | 114% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 119% | 123% |
| Fluoranthene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 108% | 118% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 111% | 108% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 119% | 114% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 120% | 120% |
| Pyrene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 107% | 116% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 107% | 107% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 114% | 110% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 119% | 118% |
| Benzo(a)anthracene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |

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.

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420 (continued)**

| | | | | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Benzo(a)anthracene | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Chrysene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Benzo(b)fluoranthene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Benzo(k)fluoranthene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Benzo(a)pyrene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 108% | 118% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 109% | 109% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 118% | 114% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 121% | 119% |
| Indeno(1,2,3-cd)pyrene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Dibenzo(a&h)anthracene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Benzo(ghi)perylene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Total PAH | LB032075 | mg/kg | 0.8 | <0.8 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.8 | <0.8 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.8 | <0.8 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.8 | <0.8 | 0% | NA | NA |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| d5-nitrobenzene (Surrogate) | LB032075 | % | - | 104% | 2 - 9% | 104% | 110% |
| | LB032078 | % | - | 104% | 0 - 6% | 102% | 102% |
| | LB032079 | % | - | 100% | 0 - 6% | 96% | 98% |
| | LB032080 | % | - | 104% | 2 - 9% | 100% | 102% |
| 2-fluorobiphenyl (Surrogate) | LB032075 | % | - | 102% | 2 - 7% | 104% | 104% |
| | LB032078 | % | - | 100% | 0 - 2% | 98% | 96% |
| | LB032079 | % | - | 94% | 2 - 5% | 94% | 90% |
| | LB032080 | % | - | 98% | 2 - 10% | 96% | 96% |
| d14-p-terphenyl (Surrogate) | LB032075 | % | - | 108% | 4 - 5% | 112% | 112% |
| | LB032078 | % | - | 108% | 0 - 2% | 110% | 112% |
| | LB032079 | % | - | 102% | 2 - 6% | 106% | 104% |
| | LB032080 | % | - | 112% | 0 - 22% | 112% | 116% |

# QC SUMMARY

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.

**pH in soil (1:5)** **Method: ME-(AU)-[ENV]AN101**

| Parameter | QC Reference | Units | LOR | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|
| pH | LB032115 | No unit | - | 2 - 3% | 101% |
| | LB032183 | No unit | - | 0 - 1% | 100% |
| | LB032186 | No unit | - | 0 - 1% | 100% |
| | LB032188 | No unit | - | 1 - 4% | 101% |

**Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest** **Method: ME-(AU)-[ENV]AN040/AN320**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Arsenic, As | LB032161 | mg/kg | 3 | <3 | 0% | 99% | 94% |
| | LB032195 | mg/kg | 3 | <3 | 0% | 97% | 86% |
| | LB032219 | mg/kg | 3 | <3 | 0% | 101% | 93% |
| | LB032220 | mg/kg | 3 | <3 | 0% | 101% | 94% |
| | LB032221 | mg/kg | 3 | <3 | | 100% | 101% |
| Cadmium, Cd | LB032161 | mg/kg | 0.3 | <0.3 | 0% | 100% | 95% |
| | LB032195 | mg/kg | 0.3 | <0.3 | 0% | 100% | 90% |
| | LB032219 | mg/kg | 0.3 | <0.3 | 0% | 101% | 95% |
| | LB032220 | mg/kg | 0.3 | <0.3 | 0% | 101% | 97% |
| | LB032221 | mg/kg | 0.3 | <0.3 | 3 - 10% | 100% | 104% |
| Chromium, Cr | LB032161 | mg/kg | 0.3 | <0.3 | 8 - 10% | 98% | 93% |
| | LB032195 | mg/kg | 0.3 | <0.3 | 4 - 10% | 97% | 87% |
| | LB032219 | mg/kg | 0.3 | <0.3 | 1 - 6% | 101% | 93% |
| | LB032220 | mg/kg | 0.3 | <0.3 | 0 - 4% | 102% | 95% |
| | LB032221 | mg/kg | 0.3 | <0.3 | | 100% | 103% |
| Copper, Cu | LB032161 | mg/kg | 0.5 | <0.5 | 0% | 102% | 97% |
| | LB032195 | mg/kg | 0.5 | <0.5 | 0 - 44% | 100% | 91% |
| | LB032219 | mg/kg | 0.5 | <0.5 | 0 - 65% | 100% | 94% |
| | LB032220 | mg/kg | 0.5 | <0.5 | 0 - 17% | 101% | 95% |
| | LB032221 | mg/kg | 0.5 | <0.5 | 2 - 8% | 99% | 103% |
| Lead, Pb | LB032161 | mg/kg | 1 | <1 | 0% | 99% | 94% |
| | LB032195 | mg/kg | 1 | <1 | 0 - 50% | 98% | 88% |
| | LB032219 | mg/kg | 1 | <1 | 21 - 34% | 101% | 95% |
| | LB032220 | mg/kg | 1 | <1 | 0 - 5% | 102% | 96% |
| | LB032221 | mg/kg | 1 | <1 | 2 - 5% | 101% | 103% |
| Nickel, Ni | LB032161 | mg/kg | 0.5 | <0.5 | 0 - 5% | 99% | 95% |
| | LB032195 | mg/kg | 0.5 | <0.5 | 0 - 17% | 98% | 89% |
| | LB032219 | mg/kg | 0.5 | <0.5 | 5 - 6% | 102% | 96% |
| | LB032220 | mg/kg | 0.5 | <0.5 | 0 - 83% | 103% | 97% |
| | LB032221 | mg/kg | 0.5 | <0.5 | | 102% | 105% |
| Zinc, Zn | LB032161 | mg/kg | 0.5 | <0.5 | 12 - 32% | 101% | 96% |
| | LB032195 | mg/kg | 0.5 | <0.5 | 0 - 7% | 100% | 97% |
| | LB032219 | mg/kg | 0.5 | <0.5 | 6 - 10% | 102% | 96% |
| | LB032220 | mg/kg | 0.5 | <0.5 | 1 - 21% | 103% | 52% |
| | LB032221 | mg/kg | 0.5 | <0.5 | 3 - 7% | 102% | 105% |

# QC SUMMARY

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 (Total Recoverable Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN403**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | LB032075 | mg/kg | 20 | <20 | 0% | 103% | 108% |
| | LB032078 | mg/kg | 20 | <20 | 0% | 100% | 100% |
| | LB032079 | mg/kg | 20 | <20 | 0% | 103% | 100% |
| | LB032080 | mg/kg | 20 | <20 | 0% | 103% | 100% |
| TRH C15-C28 | LB032075 | mg/kg | 45 | <45 | 0% | 100% | 103% |
| | LB032078 | mg/kg | 45 | <45 | 0% | 98% | 90% |
| | LB032079 | mg/kg | 45 | <45 | 0% | 103% | 100% |
| | LB032080 | mg/kg | 45 | <45 | 0% | 100% | 103% |
| TRH C29-C36 | LB032075 | mg/kg | 45 | <45 | 0% | 85% | 85% |
| | LB032078 | mg/kg | 45 | <45 | 0% | 90% | 88% |
| | LB032079 | mg/kg | 45 | <45 | 0% | 88% | 83% |
| | LB032080 | mg/kg | 45 | <45 | 0% | 95% | 88% |
| TRH C37-C40 | LB032075 | mg/kg | 100 | <100 | 0% | NA | NA |
| | LB032078 | mg/kg | 100 | <100 | 0% | NA | NA |
| | LB032079 | mg/kg | 100 | <100 | 0% | NA | NA |
| | LB032080 | mg/kg | 100 | <100 | 0% | NA | NA |
| TRH C10-C36 Total | LB032075 | mg/kg | 110 | <110 | 0% | NA | NA |
| | LB032078 | mg/kg | 110 | <110 | 0% | NA | NA |
| | LB032079 | mg/kg | 110 | <110 | 0% | NA | NA |
| | LB032080 | mg/kg | 110 | <110 | 0% | NA | NA |
| TRH C10-C40 Total | LB032075 | mg/kg | 210 | <210 | 0% | NA | NA |
| | LB032078 | mg/kg | 210 | <210 | 0% | NA | NA |
| | LB032079 | mg/kg | 210 | <210 | 0% | NA | NA |
| | LB032080 | mg/kg | 210 | <210 | 0% | NA | NA |

TRH F Bands

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| TRH >C10-C16 (F2) | LB032075 | mg/kg | 25 | <25 | 0% | 103% | 108% |
| | LB032078 | mg/kg | 25 | <25 | 0% | 100% | 100% |
| | LB032079 | mg/kg | 25 | <25 | 0% | 100% | 100% |
| | LB032080 | mg/kg | 25 | <25 | 0% | 103% | 103% |
| TRH >C16-C34 (F3) | LB032075 | mg/kg | 90 | <90 | 0% | 100% | 100% |
| | LB032078 | mg/kg | 90 | <90 | 0% | 95% | 88% |
| | LB032079 | mg/kg | 90 | <90 | 0% | 103% | 98% |
| | LB032080 | mg/kg | 90 | <90 | 0% | 100% | 100% |
| TRH >C34-C40 (F4) | LB032075 | mg/kg | 120 | <120 | 0% | 85% | NA |
| | LB032078 | mg/kg | 120 | <120 | 0% | 95% | NA |
| | LB032079 | mg/kg | 120 | <120 | 0% | 85% | NA |
| | LB032080 | mg/kg | 120 | <120 | 0% | 95% | NA |

# QC SUMMARY

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.

**VOC's in Soil Method: ME-(AU)-[ENV]AN433/AN434**

Monocyclic Aromatic Hydrocarbons

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Benzene | LB032071 | mg/kg | 0.1 | <0.1 | 0% | 109% | 94% |
| | LB032072 | mg/kg | 0.1 | <0.1 | 0% | 88% | 90% |
| | LB032073 | mg/kg | 0.1 | <0.1 | 0% | 107% | 115% |
| | LB032074 | mg/kg | 0.1 | <0.1 | 0% | 83% | 92% |
| Toluene | LB032071 | mg/kg | 0.1 | <0.1 | 0% | 101% | 89% |
| | LB032072 | mg/kg | 0.1 | <0.1 | 0% | 85% | 85% |
| | LB032073 | mg/kg | 0.1 | <0.1 | 0% | 98% | 108% |
| | LB032074 | mg/kg | 0.1 | <0.1 | 0% | 82% | 88% |
| Ethylbenzene | LB032071 | mg/kg | 0.1 | <0.1 | 0% | 97% | 89% |
| | LB032072 | mg/kg | 0.1 | <0.1 | 0% | 86% | 83% |
| | LB032073 | mg/kg | 0.1 | <0.1 | 0% | 91% | 111% |
| | LB032074 | mg/kg | 0.1 | <0.1 | 0% | 82% | 86% |
| m/p-xylene | LB032071 | mg/kg | 0.2 | <0.2 | 0% | 93% | 85% |
| | LB032072 | mg/kg | 0.2 | <0.2 | 0% | 89% | 86% |
| | LB032073 | mg/kg | 0.2 | <0.2 | 0% | 92% | 111% |
| | LB032074 | mg/kg | 0.2 | <0.2 | 0% | 80% | 83% |
| o-xylene | LB032071 | mg/kg | 0.1 | <0.1 | 0% | 100% | 93% |
| | LB032072 | mg/kg | 0.1 | <0.1 | 0% | 86% | 87% |
| | LB032073 | mg/kg | 0.1 | <0.1 | 0% | 94% | 114% |
| | LB032074 | mg/kg | 0.1 | <0.1 | 0% | 82% | 88% |

Polycyclic VOCs

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Naphthalene | LB032071 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032072 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032073 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032074 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Dibromofluoromethane (Surrogate) | LB032071 | % | - | 99% | 11 - 20% | 104% | 82% |
| | LB032072 | % | - | 90% | 2 - 6% | 93% | 93% |
| | LB032073 | % | - | 106% | 19 - 27% | 76% | 77% |
| | LB032074 | % | - | 109% | 5 - 9% | 92% | 94% |
| d4-1,2-dichloroethane (Surrogate) | LB032071 | % | - | 101% | 4 - 15% | 110% | 85% |
| | LB032072 | % | - | 97% | 4 - 14% | 99% | 100% |
| | LB032073 | % | - | 102% | 23% | 74% | 74% |
| | LB032074 | % | - | 107% | 1 - 7% | 96% | 102% |
| d8-toluene (Surrogate) | LB032071 | % | - | 103% | 15 - 16% | 105% | 78% |
| | LB032072 | % | - | 81% | 1 - 43% | 92% | 80% |
| | LB032073 | % | - | 111% | 22 - 30% | 79% | 71% |
| | LB032074 | % | - | 104% | 1 - 9% | 92% | 91% |
| Bromofluorobenzene (Surrogate) | LB032071 | % | - | 105% | 5% | 127% | 100% |
| | LB032072 | % | - | 93% | 8 - 17% | 94% | 116% |
| | LB032073 | % | - | 105% | 10 - 16% | 92% | 98% |
| | LB032074 | % | - | 100% | 5% | 101% | 92% |

Totals

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Total Xylenes* | LB032071 | mg/kg | 0.3 | <0.3 | 0% | NA | NA |
| | LB032072 | mg/kg | 0.3 | <0.3 | 0% | NA | NA |
| | LB032073 | mg/kg | 0.3 | <0.3 | 0% | NA | NA |
| | LB032074 | mg/kg | 0.3 | <0.3 | 0% | NA | NA |
| Total BTEX* | LB032071 | mg/kg | - | 0 | 0% | NA | NA |
| | LB032072 | mg/kg | - | 0 | 0% | NA | NA |

# QC SUMMARY

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.

**VOC's in Soil Method: ME-(AU)-[ENV]AN433/AN434 (continued)**

| | | | | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Total BTEX* | LB032073 | mg/kg | - | 0 | 0% | NA | NA |
| | LB032074 | mg/kg | - | 0 | 0% | NA | 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. |
| 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 analsysis by ASS or ICP as per USEPA Method 200.8. |
| AN088 | Orbital rolling for Organic pollutants are extracted from soil/sediment by transferring an appropriate mass of sample to a clear soil jar and extracting with 1:1 Dichloromethane/Acetone. Orbital Rolling method is intended for the extraction of semi-volatile organic compounds from soil/sediment samples, and is based somewhat on USEPA method 3570 (Micro Organic extraction and sample preparation). Method 3700. |
| AN101 | pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water (or 0.01M CaCl2) is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+. |
| AN106 | Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos/cm or µS/cm @ 25°C. For soils, an extract with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Salinity can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. Reference APHA 2520 B. |
| 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 |
| 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 Draft NEPM 2011, >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is not corrected for Naphthalene. |
| 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 Petroleum Hydrocarbons (TPH) 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, dependant 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). |
| AN433/AN434 | 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. |

# METHOD SUMMARY

| METHOD | METHODOLOGY SUMMARY |
|---|---|
| AN433/AN434/AN410 | VOCs and C6-C9/C6-C10 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

| | |
|---|---|
| IS | Insufficient sample for analysis. |
| LNR | Sample listed, but not received. |
| * | This analysis is not covered by the scope of accreditation. |
| ^ | Performed by outside laboratory. |
| LOR | Limit of Reporting |
| ↑↓ | Raised or Lowered Limit of Reporting |
| QFH | QC result is above the upper tolerance |
| QFL | QC result is below the lower tolerance |
| - | The sample was not analysed for this analyte |
| NVL | Not Validated |

Samples analysed as received.
Solid samples expressed on a dry weight basis.

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here:
http://www.sgs.com.au.pv.sgsv3/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

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# ANALYTICAL REPORT

bhli 9F Di FGlhc

| | |
|---|---|
| boOctant | PG, i c , b , GWO9 |
| bAeOt | , J i 9SI9i i RI9S cOhv FIO9c |
| Gddress | U/U4 ICdNstrxaADrxEe<br>, GB7li hD<br>, GB7li hD 9c3 M80+ |
| FeAepToCe | 0+Mj wf 8 UUw |
| 7ansxu xAe | gU6 M+f 68 48j M |
| i u axA | lau es@u meC2xCeerxC2.nou .aN |
| Yrolent | **MBE2017** |
| Order 9Nu mer | **MBE2017** |
| cau pAes | M |

hGJORGFORB Di FGlhc

| | |
|---|---|
| , aCa2er | WNoC2 b ra5 Hord |
| hamoratory | cSc GAel aCdrxa i CExroCu eCtaA |
| Gddress | v Cxt 6U188 , addol ct<br>GAel aCdrxa 9c3 M064 |
| FeAepToCe | gU6 Mw4f + 0+00 |
| 7ansxu xAe | gU6 Mw4f + 0+f f |
| i u axA | aN.eCExroCu eCtaAsydCey@s2s.nou |
| cSc ReHereCne | **SE116019 R0** |
| Report 9Nu mer | 0000048688 |
| Date Reported | M0 , ar M068 |
| Date RenexEed | 68 , ar M068 |

bO, , i 9Fc

Gnnredxted Hdr nou pAaCne 5xT IcO/li b 6j 0M4. 9GFG annredxted Aamoratory M4UM(+84+).

cIS9GFORIi c

GCdy c NttoC
Or2aCxns b Teu xst

WNoC2 b ra5 Hord
hamoratory , aCa2er

Kau rNAGTsaC
, etaAs b Teu xst

hy Kxu Wa
Or2aCxns c NperExsor

c CezaCa Kostoska
ICor2aCxns b Teu xst

| Parameter | Units | LOR | Sample Number SE116019.001 Sample Matrix Soil Sample Date 12 Mar 2013 Sample Name TP31 3m | SE116019.002 Soil 12 Mar 2013 Dup 1 |
|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | |
| , oConynAn Grou atɔn WydronarmɒCs | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 |
| m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 |
| YoAynynAn VObs | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 |
| cNrro2ates | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **71** | **72** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **90** | **96** |
| d8-toluene (Surrogate) | % | - | **77** | **77** |
| Bromofluorobenzene (Surrogate) | % | - | **76** | **83** |
| FotaAs | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 |
| FRW7 JaCds | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 |
| Benzo(b&k)fluoranthene | mg/kg | 0.2 | <0.2 | <0.2 |
| Benzo(b)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 |
| Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 |
| Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | <0.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | <0.1 |
| Dibenzo(a&h)anthracene | mg/kg | 0.1 | <0.1 | <0.1 |
| Benzo(ghi)perylene | mg/kg | 0.1 | <0.1 | <0.1 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE116019.001<br>Soil<br>12 Mar 2013<br>TP31 3m | SE116019.002<br>Soil<br>12 Mar 2013<br>Dup 1 |
|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)** | | | | |
| c Nrro2ates | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **110** | **96** |
| 2-fluorobiphenyl (Surrogate) | % | - | **103** | **90** |
| d14-p-terphenyl (Surrogate) | % | - | **122** | **108** |
| **pH in soil (1:5) Method: AN101** | | | | |
| pH | pH Units | - | **7.2** | **6.5** |
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | **27** | **9** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | |
| Arsenic, As | mg/kg | 3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **3.0** | **2.0** |
| Copper, Cu | mg/kg | 0.5 | **1.0** | **2.7** |
| Lead, Pb | mg/kg | 1 | **2** | **4** |
| Nickel, Ni | mg/kg | 0.5 | **0.8** | **0.7** |
| Zinc, Zn | mg/kg | 0.5 | **66** | **57** |
| **Mercury in Soil Method: AN312** | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | |
| % Moisture | % | 0.5 | **6.3** | **6.9** |

# QC SUMMARY

, J maCk resNAs are nou pared to tTe hxu xt oHReportxC2
hb c aCd , c spxke renoEerxes are u easNred as tTe perneCta2e oHaCaAyte renoEered Hhou tTe sau pAe nou pared tTe tTe au oNCt oHaCaAyte spxked xCto tTe sau pAe.
Dv Y aCd , c D reAtxEe perneCt dxHereCnes are u easNred a2axCst tTex on2xCaAnoNCterpart sau pAes annordxC2 to tTe Hdru NAa: *the absolute difference of the two results divided by the average of the two results as a percentage*. 3 Tere tTe Dv Y RYD xs '9 G' 1tTe resNAs are Aess tTaC tTe hOR aCd tTNs tTe RYD xs Cot appAnamAe.

**Conductivity and TDS by Calculation - Soil** **Method: ME-(AU)-[ENV]AN106**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|---|
| Conductivity of Extract (1:5 dry sample basis) | LB035409 | µS/cm | 1 | <1 | 6% | 99% |

**Mercury in Soil** **Method: ME-(AU)-[ENV]AN312**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Mercury | LB035337 | mg/kg | 0.05 | <0.05 | 0 - 18% | 99% | 88% |

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil** **Method: ME-(AU)-[ENV]AN420**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|---|
| Naphthalene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | 117% |
| 2-methylnaphthalene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | NA |
| 1-methylnaphthalene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | NA |
| Acenaphthylene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | 110% |
| Acenaphthene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | 108% |
| Fluorene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | NA |
| Phenanthrene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | 122% |
| Anthracene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | 114% |
| Fluoranthene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | 122% |
| Pyrene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | 124% |
| Benzo(a)anthracene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | NA |
| Chrysene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | NA |
| Benzo(b&k)fluoranthene | LB035399 | mg/kg | 0.2 | <0.2 | 0% | NA |
| Benzo(b)fluoranthene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | NA |
| Benzo(k)fluoranthene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | NA |
| Benzo(a)pyrene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | 114% |
| Indeno(1,2,3-cd)pyrene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | NA |
| Dibenzo(a&h)anthracene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | NA |
| Benzo(ghi)perylene | LB035399 | mg/kg | 0.1 | <0.1 | 0% | NA |
| Total PAH | LB035399 | mg/kg | 0.8 | <0.8 | 0% | NA |

c Nrro2ates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|---|
| d5-nitrobenzene (Surrogate) | LB035399 | % | - | 111% | 7% | 92% |
| 2-fluorobiphenyl (Surrogate) | LB035399 | % | - | 99% | 4% | 90% |
| d14-p-terphenyl (Surrogate) | LB035399 | % | - | 114% | 4% | 83% |

# QC SUMMARY

, J maCx resNAs are nou pared to tTe hxu xt oHReportxC2
hb c aCd , c spxke renoEenes are u easNred as tTe perneCta2e oHaCaAyte renoEered Hhou tTe sau pAe nou pared tTe tTe au oNCt oHaCaAyte spxked xCto tTe sau pAe.
Dv Y aCd , c D reAtxEe perneCt dxHereCnes are u easNred a2axCst tTex on2xCaAnoNCterpart sau pAes annordxC2 to tTe Hdru NAa: *the absolute difference of the two results divided by the average of the two results as a percentage*. 3 Tere tTe Dv Y RYD xs '9 G' 1tTe resNAs are Aess tTaC tTe hOR aCd tTNs tTe RYD xs Cot appAnamAe.

**pH in soil (1:5)** **Method: ME-(AU)-[ENV]AN101**

| Parameter | QC Reference | Units | LOR | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|
| pH | LB035410 | pH Units | - | 1 - 9% | 100% |

**Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest** **Method: ME-(AU)-[ENV]AN040/AN320**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Arsenic, As | LB035335 | mg/kg | 3 | <3 | 1 - 17% | 98% | 91% |
| Cadmium, Cd | LB035335 | mg/kg | 0.3 | <0.3 | 0 - 2% | 100% | 95% |
| Chromium, Cr | LB035335 | mg/kg | 0.3 | <0.3 | 4 - 12% | 97% | 99% |
| Copper, Cu | LB035335 | mg/kg | 0.5 | <0.5 | 5 - 11% | 99% | 94% |
| Lead, Pb | LB035335 | mg/kg | 1 | <1 | 2 - 15% | 98% | 92% |
| Nickel, Ni | LB035335 | mg/kg | 0.5 | <0.5 | 3 - 13% | 98% | 93% |
| Zinc, Zn | LB035335 | mg/kg | 0.5 | <0.5 | 4 - 9% | 98% | 109% |

**TRH (Total Recoverable Hydrocarbons) in Soil** **Method: ME-(AU)-[ENV]AN403**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|---|
| TRH C10-C14 | LB035399 | mg/kg | 20 | <20 | 0% | 100% |
| TRH C15-C28 | LB035399 | mg/kg | 45 | <45 | 0% | 95% |
| TRH C29-C36 | LB035399 | mg/kg | 45 | <45 | 0% | 83% |
| TRH C37-C40 | LB035399 | mg/kg | 100 | <100 | 0% | NA |
| TRH C10-C36 Total | LB035399 | mg/kg | 110 | <110 | 0% | NA |
| TRH C10-C40 Total | LB035399 | mg/kg | 210 | <210 | 0% | NA |

FRW7 JaCds

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|---|
| TRH >C10-C16 (F2) | LB035399 | mg/kg | 25 | <25 | 0% | 100% |
| TRH >C16-C34 (F3) | LB035399 | mg/kg | 90 | <90 | 0% | 93% |
| TRH >C34-C40 (F4) | LB035399 | mg/kg | 120 | <120 | 0% | 85% |

# QC SUMMARY

, J maCk resNAs are nou pared to tTe hxu xt oHReportxC2
hb c aCd , c spxke renoEenes are u easNred as tTe perneCta2e oHaCaAyte renoEered Hhou tTe sau pAe nou pared tTe tTe au oNCt oHaCaAyte spxked xCto tTe sau pAe.
Dv Y aCd , c D reAtxEe perneCt dxHereCnes are u easNred a2axCst tTex on2xCaAnoNCterpart sau pAes annordxC2 to tTe Hdru NAa: *the absolute difference of the two results divided by the average of the two results as a percentage*. 3 Tere tTe Dv Y RYD xs '9 G' 1tTe resNAs are Aess tTaC tTe hOR aCd tTNs tTe RYD xs Cot appAnamAe.

**VOC's in Soil** **Method: ME-(AU)-[ENV]AN433/AN434**

, oConynAn Grou atxn WydronarmoCs

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Benzene | LB035364 | mg/kg | 0.1 | <0.1 | 0% | 81% | 87% |
| Toluene | LB035364 | mg/kg | 0.1 | <0.1 | 0% | 86% | 93% |
| Ethylbenzene | LB035364 | mg/kg | 0.1 | <0.1 | 0% | 87% | 98% |
| m/p-xylene | LB035364 | mg/kg | 0.2 | <0.2 | 0% | 84% | 97% |
| o-xylene | LB035364 | mg/kg | 0.1 | <0.1 | 0% | 83% | 100% |

YoAynynAn VObs

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Naphthalene | LB035364 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |

cNrro2ates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Dibromofluoromethane (Surrogate) | LB035364 | % | - | 124% | 12% | 92% | 75% |
| d4-1,2-dichloroethane (Surrogate) | LB035364 | % | - | 114% | 2% | 87% | 90% |
| d8-toluene (Surrogate) | LB035364 | % | - | 118% | 1% | 94% | 74% |
| Bromofluorobenzene (Surrogate) | LB035364 | % | - | 119% | 4% | 103% | 90% |

FotaAs

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Total Xylenes* | LB035364 | mg/kg | 0.3 | <0.3 | 0% | NA | NA |
| Total BTEX* | LB035364 | mg/kg | - | <3 | 0% | NA | NA |

# METHOD SUMMARY

| , i FWOD | , i FWODOhOSB cv, , GRB |
|---|---|
| G9 00M | FTe test xs narnxed oNt my dryxC2 (at exTer +0°b or 604°b ) a kCo5 C u ass oHsau pAe xC a 5 ex2Ted eEaporatxC2 masxC. GHter HWAy dry tTe sau pAe xs re-5 ex2Ted. c au pAss sNnT as sAd2e aCd sedxu eCt TaEXC2 Tx2T perneCta2es oH u oxstNre 5 xAtake sou e txu e xC a dryxC2 oEeC Hor nou pAete reu oEaAoH5 ater. |
| G9 0+0 | G portxoC oHsau pAe xs dx2ested 5 xT 9 xtrxn anxd to denou pose or2aCxn u atter aCd WydronTAsrxn anxd to nou pAete tTe dx2estxoC oHu etaAs aCd tTeC HAtered Hor aCaAsysxs my Gc c or Ib Y as per v c i YG , etTod M00.w. |
| G9 0ww | OrmxtaAroAXC2 Hor Or2aCxn poANtaCts are el tranted Hrou soxAsedxu eCt my traCsHerrxC2 aC approprxate u ass oHsau pAe to a nAear soxAar aCd el trantxC2 5 xT 6:6 DxnTAsrou etTaCe/GnetoCe. OrmxtaARoAXC2 u etTod xs xCteCded Hor tTe el trantxoC oHseu xEoAatxAe or2aCxn nou poNCds Hrou soxAsedxu eCt sau pAes1aCd xs mased sou e5 Tat oC v c i YG u etTod 84j 0 (, xnro Or2aCxn el trantxoC aCd sau pAe preparatxoC). , etTod 8j 00. |
| G9 606 | pWxC c oxAc AAd2e c edxu eCt aCd 3 ater: pWxs u easNred eAentrou etrxnaAy NsxC2 a nou mCatxoC eAentrode (2Aass pAAs reHereCne eAentrode) aCd xs naAmrated a2axCst a staCdard soAAtxoC oHpotassxNu nTAsrxde. b oCdNntxExty xs 2eCeraAy reported as µu Tos/nu or µc/nu @ M4°b . 7or soxAs1aC el trant 5 xT 5 ater xs u ade at a ratxo oH6:4 aCd tTe i b deteru xCed aCd reported oC tTe el trant1or naANAated mank to tTe as-renexEed sau pAe. c aACxty naC me estxu ated Hrou noCdNntxExty NsxC2 a noCEersxoC Hantor15 TxnT Hor CatNraA5 aters1xs xC tTe raC2e 0.44 to 0.j 4. ReHereCne GYWG M4M0 J . |
| G9 86M | , ernNry my b oAl VapoNr GGc xC c oxAs: GHter dx2estxoC 5 xT Cxtrxn anxd1Tydro2eC perol xde aCd TydronTAsrxn anxd1 u ernNry xoCs are redNned my staCCoNs nTAsrxde rea2eCt xC anxdxn soAAtxoC to eAsu eCtaAu ernNry. FTxs u ernNry EapoNr xs pNr2ed my Cxtro2eC xCto a noAl neAAxC aC atou xn amsorptxoC spentrou eter or u ernNry aCaAyser. QNaCtxHnatxoC xs u ade my nou parxC2 amsormaCnes to tTose oHtTe naAmratxoC staCdards. ReHereCne GYWG 866M8400 |
| G9 +08 | FotaARenoEeramAs WydronarmoCs: Deteru xCatxoC oHWydronarmoCs my 2as nTrou ato2rapTy aHter a soAEeCt el trantxoC. DetentxoC xs my HAau e xoCxsatxoC detentor (7 ID) tTat prodNnes aC eAentroCxn sx2CaAxC proportxoC to tTe nou mNstxmAs u atter passxC2 tTroN2T xt. FotaARenoEeramAs WydronarmoCs (FRW) are roNtxCeAy reported as HdNr aAcaCe 2roNpxC2s mased oC tTe narmoC nTaxC AsC2tT oHtTe nou poNCds: b U-b f 1b 60-b 6+1b 64-b MwaCd b Mf -b 8U aCd xC reno2CxtxoC oHtTe DraHt9 i Y, M0661>b 60-b 6U (7M)1>b 6U-b 8+ (78) aCd >b 8+-b +0 (7+). 7Mxs Cot norrented Hor 9 apTtTaAsCe. |
| G9 +08 | GddxtxoCaAy1tTe EoAatxAs b U-b f HantxoC u ay me deteru xCed my a pNr2e aCd trap tenTCxqNe aCd Sb /, c menaNse oH tTe poteCtxaAHor EoAatxAss Asss. FotaAYetroAsNu WydronarmoCs (FYW) HdAs5 s tTe sau e u etTod oHaCaAysxs aHter sxAna 2eAnAsaCNp oHtTe soAEeCt el trant. GAptTatxn/Grou atxn c penxatxoC HdAs5 s tTe sau e u etTod oHaCaAysxs aHter HantxoCatxoC oHtTe soAEeCt el trant oEer sxAna 5 xT dxHereCtxaApoAarxty oHtTe eANeCt soAEeCts. |
| G9 +08 | FTe Sb /7 ID u etTod xs Cot 5 eAAsNxted to tTe aCaAysxs oHreHxCed Tx2T mxAC2 poxCt u aterxaAs (xe ANmrxnatxC2 oxAs or 2reases) mNt xs partxoNAarAy sNxted Hor u easNrxC2 dxeseAlkeroseCe aCd petroAxHhare to noCtroAEoAatxAty xs takeC. FTxs u etTod 5 xAdetent CatNraAy onnNrxC2 TydronarmoCs1Apxds1aCxu aAHalts1pTeCoAs aCd YGWs xHtTey are preseCt at sNHHxeCt AsEeAs1depeCdaCt oC tTe Nse oHspenxbn nAsaCNp/HantxoCatxoC tenTCxqNes. ReHereCne v c i YG 8460J 1 w064J . |
| G9 +M0 | (c VOb s) xCnANdxC2 Ob 1OY1Yb J 1Wermrxndes1YGW1YTtTaAates aCd c penxated YTeCoAs (etn) xC soxAs1sedxu eCts aCd 5 aters are deteru xCed my Sb , c/i b D tenTCxqNe HdAs5 xC2 approprxate soAEeCt el trantxoC proness (J ased oC v c i YG 8400b aCd wMj 0D). |
| G9 +88/G9 +8+ | VOb s aCd b U-b f Wydronarmocs my Sb -, c Y&F: VOb `s are EoAatxAs or2aCxn nou poNCds. FTe sau pAe xs preseCted to a 2as nTrou ato2rapT Exa a pNr2e aCd trap (Y&F) noCneCtrator aCd aNtosau pAer aCd xs detented 5 xT a , ass c pentrou eter (, c D). coAd sau pAes are xCxtxaAy el tranted 5 xT u etTaCoA5 TxAst AqNxd sau pAes are pronessed dxrentAy. ReHereCnes: v c i YG 4080J 1w0M0G1wMJ0. |

# METHOD SUMMARY

, i FWOD

G9 +88/G9 +8+/G9 +60

, i FWODOhOSB c v, , GRB

VOb s aCd b U-b f /b U-b 60 Wydronarmo Cs my S b -, c Y&F: VOb `s are EoAatxAe or2aCon nou poNCds. FTe sau pAe xs preseCted to a 2as nTrou ato2rapT Exa a pNr2e aCd trap (Y&F) noCneCtrator aCd aNtosau pAer aCd xs detented 5 xT a , ass c pentrou eter (, c D). c oAd sau pAes are xCtxaAy el tranted 5 xT u etTaCoA5 TxAst AqNxd sau pAes are pronessed dxentAy. ReHereCnes: v c i YG 4080J 1w0M0G1wMU0.

7OOF9 OFi c

| | | | |
|---|---|---|---|
| Ic | ICsNHtxeCt sau pAe Hor aCaAysxs. | hOR | hxu xt oHReportxC2 |
| h9 R | c au pAe Asted1mNt Cot renexEed. | ~% | Raxsed or ho5 ered hxu xt oHReportxC2 |
| * | FTxs aCaAysxs xs Cot noEered my tTe snope oH annredxtatxoC. | Q7W | Qb resNAxs amoEe tTe Nopper toAeraCne |
| ** | ICdxnatxEe data1tTeoretxnaATotAdxC2 txu e el needed. | Q7h | Qb resNAxs meAo5 tTe Ao5 er toAeraCne |
| ^ | YerHoru ed my oNtsxde Aamoratory. | - | FTe sau pAe 5 as Cot aCaAysed Hor tTxs aCaAyte |
| | | 9 Vh | 9 ot VaAdated |

c au pAes aCaAysed as renexEed.
c oAd sau pAes el pressed oC a dry 5 ex2Tt masxs.

c ou e totaAs u ay Cot appear to add Np menaNse tTe totaAxs roNCded aHter addxC2 Np tTe ra5 EaANes.

FTe Qb nrxtenxa are sNmtent to xCterCaAreExe5 annordxC2 to tTe c Sc QGQb pAaC aCd u ay me proExded oC reqNest or aAerCatxEeAy naC me HdNCd Tere:
Tttp://5 5 5 .s2s.nou .aN.pE.s2sE8/↑/u edxa/honaAGNstraAa/DonNu eCts/FenTCxnaA, M0DonNu eCts/, Y-Gv -i 9 V-Qv -0MM↓ M0QG↓ M0Qb ↓ M0YAaC.pdH

FTxs donNu eCt xs xssNed1 oC tTe bAeCt's meTaAH my tTe b ou paCy NCder xts SeCeraA b oCdxtxoCs oH c erExne aEaxAamAe oC reqNest aCd annessxmAe at Tttp://5 5 5 .aN.s2s.nou /teru s_aCd_noCdxtxoCs_aN. FTe bAeCt's atteCtxoC xs dra5 C to tTe Au xtatxoC oH AamAty1 xCdeu CAhhatxoC aCd lNnsdxntxoC xssNes deHxCed tTerexC.

GCy otTer ToAter oH tTxs donNu eCt xs adExsed tTat xCHoru atxoC noCtaxCed TereoC reHAents tTe b ou paCy's HCdxC2s at tTe txu e oH xts xCterEeCtxoC oCAy aCd 5 xTxC tTe Au xts oH b AeCt's xCstrNntxoCs1 xH aCy. FTe b ou paCy's soAe respoCsxmAty xs to xts b AeCt aCd tTxs donNu eCt does Cot el oCerate partxes to a traCsantxoC Hrou el ermxsxC2 aAttTexr n2Tts aCd omA2atxoCs NCder tTe traCsantxoC donNu eCts.

FTxs report u Nst Cot me reprodNhed1el nept xC HWA.

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**ABN:** 98 153 268 896

# *MATERIAL TEST REPORT*

**Report Number:** 13/00015/02
**Issue Number:** 1
*This report replaces all previous issues*

**Client:** MB Engineering Solutions
PO Box 775
The Junction NSW 2291
**Principal:** -
**Project Number:** 13/00015
**Project:** Material Testing
**Lot Number:** TP1 to TP10, TP31 to TP35
**TRN:** Job No. MBE 2017

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Approved Signatory: Alan Cullen
Title: Principal Geotechnician
Date of Issue: 16/01/2013
NATA Accredited Labaratory Number: 18686

**Sample Details**

| | |
|---|---|
| Client Reference / Description: | TP1 to TP10, TP31 to TP35 |
| Laboratory Reference: | 00054 |
| Sample Number: | 00054-GR-01 to 00054-GR-30 |
| Sampling Method: | Submitted by Client |
| Date Sampled: | 9/01/2013 |
| Date Submitted: | 15/01/2013 |
| Sample Location: | Various Test Pits |
| Specification: | - |
| Source: | Onsite |
| Material: | Insitu |

## Foreign Materials Content of Recycled Crushed Concrete (T276)

| | | | Percentage Retained | | |
|---|---|---|---|---|---|
| **Test Pit No.** | **Depth of Sample** | **Sample No.** | **TYPE I (%)** Metal, Glass, Asphalt, Stone, Ceramics & Slag, (other blast furnace slag) | **TYPE II (%)** Plaster, Clay Lumps and other Friable Material | **TYPE III (%)** Rubber, Plastic, Bitumen, Paper, Cloth, Paint, Wood and other Vegetable Matter |
| TP1 | 1m | 00054-GR-01 | 0.2 | 0.0 | 0.0 |
| TP1 | 2m | 00054-GR-02 | 0.0 | 0.0 | 0.0 |
| TP2 | 1m | 00054-GR-03 | 0.0 | 0.0 | 0.0 |
| TP2 | 2m | 00054-GR-04 | 0.6 | 0.0 | 0.0 |
| TP3 | 1m | 00054-GR-05 | 0.0 | 0.0 | 0.0 |
| TP3 | 2m | 00054-GR-06 | 0.0 | 0.0 | 0.0 |
| TP4 | 1m | 00054-GR-07 | 0.0 | 0.0 | 0.0 |
| TP4 | 2m | 00054-GR-08 | 0.0 | 0.0 | 0.0 |
| TP5 | 1m | 00054-GR-09 | 0.0 | 0.0 | 0.0 |
| TP5 | 2m | 00054-GR-10 | 0.0 | 0.0 | 0.0 |
| TP6 | 1m | 00054-GR-11 | 0.0 | 0.0 | 0.0 |
| TP6 | 2m | 00054-GR-12 | 0.0 | 0.0 | 0.1 |
| TP7 | 1m | 00054-GR-13 | 0.0 | 0.0 | 0.0 |
| TP7 | 2m | 00054-GR-14 | 0.0 | 0.0 | 0.0 |
| TP8 | 1m | 00054-GR-15 | 0.0 | 0.0 | 0.0 |
| TP8 | 2m | 00054-GR-16 | 0.0 | 0.0 | 0.0 |
| TP9 | 1m | 00054-GR-17 | 0.0 | 0.0 | 0.0 |
| TP9 | 2m | 00054-GR-18 | 0.0 | 0.0 | 0.0 |
| TP10 | 1m | 00054-GR-19 | 0.0 | 0.0 | 0.0 |
| TP10 | 2m | 00054-GR-20 | 0.0 | 0.0 | 0.0 |
| TP31 | 1m | 00054-GR-21 | 0.0 | 0.0 | 0.0 |
| TP31 | 2m | 00054-GR-22 | 0.0 | 0.0 | 0.0 |
| TP32 | 1m | 00054-GR-23 | 0.0 | 0.0 | 0.0 |
| TP32 | 2m | 00054-GR-24 | 0.0 | 0.0 | 0.0 |
| TP33 | 1m | 00054-GR-25 | 0.0 | 0.0 | 0.0 |
| TP33 | 2m | 00054-GR-26 | 0.0 | 0.0 | 0.0 |
| TP34 | 1m | 00054-GR-27 | 0.0 | 0.0 | 0.0 |
| TP34 | 2m | 00054-GR-28 | 0.0 | 0.0 | 0.0 |
| TP35 | 1m | 00054-GR-29 | 0.0 | 0.0 | 0.0 |
| TP35 | 2m | 00054-GR-30 | 0.0 | 0.0 | 0.0 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**Comments:**

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# *MATERIAL TEST REPORT*

**Report Number:** 13/00015/01
**Issue Number:** 1

*This report replaces all previous issues*

**Client:** MB Engineering Solutions
PO Box 775
The Junction NSW 2291
**Principal:** -
**Project Number:** 13/00015
**Project:** Material Testing
**Lot Number:** TP11 to TP30
**TRN:** Job No. MBE 2017

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Approved Signatory: Alan Cullen
Title: Principal Geotechnician
Date of Issue: 16/01/2013
NATA Accredited Labaratory Number: 18686

**Sample Details**

| | |
|---|---|
| Client Reference / Description: | TP11 to TP30 |
| Laboratory Reference: | 00052 |
| Sample Number: | 00052-GR-01 to 00052-GR-40 |
| Sampling Method: | Submitted by Client |
| Date Sampled: | 8/01/2013 |
| Date Submitted: | 15/01/2013 |
| Sample Location: | Various Test Pits |
| Specification: | - |
| Source: | Onsite |
| Material: | Insitu |

## Foreign Materials Content of Recycled Crushed Concrete (T276)

| Test Pit No. | Depth of Sample | Sample No. | Percentage Retained TYPE I (%) Metal, Glass, Asphalt, Stone, Ceramics & Slag, (other than blast furnace slag) | TYPE II (%) Plaster, Clay lumps and other Friable Material | TYPE III (%) Rubber, Plastic, Bitumen, Paper, Cloth, Paint, Wood and other Vegetable Matter |
|---|---|---|---|---|---|
| TP11 | 1m | 00052-GR-01 | 0.0 | 0.0 | 0.0 |
| TP11 | 2m | 00052-GR-02 | 0.0 | 0.0 | 0.0 |
| TP12 | 1m | 00052-GR-03 | 0.0 | 0.0 | 0.0 |
| TP12 | 2m | 00052-GR-04 | 0.0 | 0.0 | 0.0 |
| TP13 | 1m | 00052-GR-05 | 0.0 | 0.0 | 0.0 |
| TP13 | 2m | 00052-GR-06 | 0.0 | 0.0 | 0.0 |
| TP14 | 1m | 00052-GR-07 | 0.0 | 0.0 | 0.0 |
| TP14 | 2m | 00052-GR-08 | 0.0 | 0.0 | 0.0 |
| TP15 | 1m | 00052-GR-09 | 0.0 | 0.0 | 0.0 |
| TP15 | 2m | 00052-GR-10 | 0.0 | 0.0 | 0.0 |
| TP16 | 1m | 00052-GR-11 | 0.0 | 0.0 | 0.0 |
| TP16 | 2m | 00052-GR-12 | 0.0 | 0.0 | 0.0 |
| TP17 | 1m | 00052-GR-13 | 0.0 | 0.0 | 0.0 |
| TP17 | 2m | 00052-GR-14 | 0.0 | 0.0 | 0.0 |
| TP18 | 1m | 00052-GR-15 | 0.1 | 0.0 | 0.0 |
| TP18 | 2m | 00052-GR-16 | 0.0 | 0.0 | 0.0 |
| TP19 | 1m | 00052-GR-17 | 7.8 | 0.0 | 0.0 |
| TP19 | 2m | 00052-GR-18 | 0.0 | 0.0 | 0.0 |
| TP20 | 1m | 00052-GR-19 | 0.8 | 0.0 | 0.0 |
| TP20 | 2m | 00052-GR-20 | 0.0 | 0.0 | 0.0 |
| TP21 | 1m | 00052-GR-21 | 0.0 | 0.0 | 0.0 |
| TP21 | 2m | 00052-GR-22 | 0.0 | 0.0 | 0.0 |
| TP22 | 1m | 00052-GR-23 | 0.0 | 0.0 | 0.0 |
| TP22 | 2m | 00052-GR-24 | 0.0 | 0.0 | 0.0 |
| TP23 | 1m | 00052-GR-25 | 0.0 | 0.0 | 0.0 |
| TP23 | 2m | 00052-GR-26 | 0.0 | 0.0 | 0.0 |
| TP24 | 1m | 00052-GR-27 | 0.0 | 0.0 | 0.0 |
| TP24 | 2m | 00052-GR-28 | 0.0 | 0.0 | 0.0 |
| TP25 | 1m | 00052-GR-29 | 0.0 | 0.0 | 0.0 |
| TP25 | 2m | 00052-GR-30 | 0.0 | 0.0 | 0.0 |
| TP26 | 1m | 00052-GR-31 | 0.0 | 0.0 | 0.0 |
| TP26 | 2m | 00052-GR-32 | 0.0 | 0.0 | 0.0 |
| TP27 | 1m | 00052-GR-33 | 0.0 | 0.0 | 0.0 |
| TP27 | 2m | 00052-GR-34 | 0.0 | 0.0 | 0.0 |
| TP28 | 1m | 00052-GR-35 | 0.0 | 0.0 | 0.0 |
| TP28 | 2m | 00052-GR-36 | 0.0 | 0.0 | 0.0 |
| TP29 | 1m | 00052-GR-37 | 0.0 | 0.0 | 0.0 |
| TP29 | 2m | 00052-GR-38 | 0.0 | 0.0 | 0.0 |
| TP30 | 1m | 00052-GR-39 | 0.0 | 0.0 | 0.0 |
| TP30 | 2m | 00052-GR-40 | 0.0 | 0.0 | 0.0 |

**Comments:**

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# *MATERIAL TEST REPORT*

**Report Number:** 13/00015/06
**Issue Number:** 1

*This report replaces all previous issues*

**Client:** MB Engineering Solutions
PO Box 775
The Junction NSW 2291
**Principal:** -
**Project Number:** 13/00015
**Project:** Material Testing
**Lot Number:** TP31
**TRN:** Job No. MBE 2017

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Approved Signatory: Dane Cullen
Title: Senior Geotechnician
Date of Issue: 13/03/2013
NATA Accredited Labaratory Number: 18686

**Sample Details**

| | |
|---|---|
| Client Reference / Description: | TP31 (3m) |
| Laboratory Reference: | 00251 |
| Sample Number: | 00251-GR-01 |
| Sampling Method: | Submitted by Client |
| Date Sampled: | 12/03/2013 |
| Date Submitted: | 12/03/2013 |
| Sample Location: | TP31 (3m) |
| Specification: | - |
| Source: | Onsite |
| Material: | Insitu |

## Foreign Materials Content of Recycled Crushed Concrete (T276)

| | | | Percentage Retained | | |
|---|---|---|---|---|---|
| **Test Pit No.** | **Depth of Sample** | **Sample No.** | **TYPE I (%)** Metal, Glass, Asphalt, Stone, Ceramics & Slag, (other than blast furnace slag) | **TYPE II (%)** Plaster, Clay lumps and other Friable Material | **TYPE III (%)** Rubber, Plastic, Bitumen, Paper, Cloth, Paint, Wood and other Vegetable Matter |
| TP31 | 3.00 | 00251-GR-01 | 0.0 | 0.0 | 0.0 |

**Comments:**

21 May 2013
Brad Hughes
Midal Cables International Pty Ltd
PO Box 322
RAYMOND TERRACE NSW 2324

Dear Brad

**RE: MBE2017 - EXCAVATED NATURAL MATERIAL ASSESSMENT ADDENDENDUM LOT 11 MCINTYRE RD, TOMAGO**

## 1 INTRODUCTION

MB Engineering Solutions Pty Ltd (MBES) was commissioned by Midal Cables International Pty Ltd (Midal) to undertake an additional Excavated Natural Material (ENM) Exemption Assessment for Lot 11 DP 270328 McIntyre Rd, Tomago NSW (the site). An ENM Assessment was conducted previously for the entire site to a depth of 2m below ground surface (mbgs) (MBES ref MBE2017-Report, 22 January 2013). A section of site near the central western boundary was also assessed for ENM to a depth of 3mbgs (MBES ref: MBES 2017-Report-Rev1, 8 April 2013). This assessment relates a >500m$^2$ north western portion of site which was planned to be excavated to a depth of approximately 4m (see Figure 1).

The following scope of work was undertaken:

- Field investigations;
- Laboratory Testing; and
- Data assessment and reporting

## 2 FIELDWORK

The subsurface sands were sampled on 23 April 2013 by a MBES Environmental Scientist. 5 test pits (Building 1a-e) were excavated using an excavator supplied by Kingston Building Pty Ltd in the northwest portion of site (Figure 1). Representative ENM samples were collected from the material excavated from 3m and 4m mbgs from each test pit. The samples were stored in 250ml glass jars and 6kg bags.

Five additional samples were collected at 4mbgs from the five test pits. These samples were field screened for the presence of potential acid sulfate soils ASS.

No staining was apparent during sampling activities. A mild hydrogen sulfide odour was noted. Disposable nitrile gloves were changed between the collections of each sample.



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The Junction NSW 2291
ABN 82 131 293 822

The ENM samples were transported in an ice-filled cooler box for transport to SGS Australia Pty Ltd (SGS) for analysis under chain of custody conditions. One field duplicate was also collected in a 250ml jar.

## 3 ANALYTICAL SUITE

Selected samples were analysed by SGS, a NATA accredited laboratory, for:

- Eight Metals (arsenic, cadmium, chromium, copper, lead, nickel, zinc, and mercury);
- Benzene, toluene, ethylbenzene, xylenes;
- Total Polycyclic Aromatic Hydrocarbons
- Benzo[a]pyrene
- Electrical Conductivity (EC); and
- pH
- Foreign materials by mass, including;
    - Rubber, plastic, paper, cloth, paint, wood and other vegetable matter; and
- SPOCAS

## 4 RESULTS AND DISCUSSION

### 4.1 Field Results

Five test pits were excavated and samples were collected from 3m and 4mbgs. This was sufficient sampling to characterise the subsoil of a 500m$^2$ area between 3 and 5 mbgs. The diameter of a hot spot can be detected with 95% confidence is 11.8 in accordance with ENM Exemption.

ASS field results indicate that potential ASS may be present at approximately 4mbgs. The potential ASS material was dark brown in appearance.

### 4.2 Quality Assurance / Quality Control

SGS conducted internal quality control using spikes, laboratory duplicates and method blanks. The laboratory internal quality control testing showed method blank results below the laboratory limit of reporting and duplicate results, laboratory control spike and matrix spike recoveries within control limits.

One field duplicate was analysed by SGS. The relative percentage difference (RPD) between the primary and duplicate for zinc, 74%, was outside the acceptance criteria of 50%. The remaining RPDs were within the acceptance criteria.

Based on review of the QA/QC data (>95% of the QC data was within acceptance criteria), it is considered that the results are likely to be representative of conditions at the sampling locations at the time of sampling and are suitable for use in the resource recovery exemption.

### 4.3 Laboratory Results

The test results show no exceedances for the Absolute Maximum and Maximum Average Concentrations for the analytes. Table 1, below, summarises the average and maximum concentrations and compares the results to the ENM exemption criteria. Table 2, attached, summarises the data and presents the individual results.



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The Junction NSW 2291
ABN 82 131 293 822

**TABLE 1: AVERAGE AND MAXIMUM ANALYTE CONCENTRATION SUMMARY**

| | | Maximum average concentration for characterisation | Absolute maximum concentration | Laboratory Average Concentration | Laboratory Maximum Concentration |
|---|---|---|---|---|---|
| **Analyte Name** | **Units** | | | | |
| Benzene | mg/kg | NA | 0.5 | <0.1 | <0.1 |
| Toluene | mg/kg | NA | 65 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | NA | 25 | <0.1 | <0.1 |
| Total Xylenes | mg/kg | NA | 15 | <0.3 | <0.3 |
| TRH C10-C36 Total | mg/kg | 250 | 500 | <110 | <110 |
| Benzo(a)pyrene | mg/kg | 0.5 | 1 | <0.1 | <0.1 |
| Total PAH | mg/kg | 20 | 40 | <0.8 | <0.8 |
| pH | No unit | 5 to 9 | 4.5 to 10 | 5.9 | 6.6 |
| Conductivity | dS/m | 1.5 | 3 | 0.02 | 0.2 |
| Arsenic | mg/kg | 20 | 40 | <3 | <3 |
| Cadmium | mg/kg | 0.5 | 1 | <0.3. | <0.3 |
| Chromium | mg/kg | 75 | 150 | 1 | 1.4 |
| Copper | mg/kg | 100 | 200 | <0.5 | 0.6 |
| Lead | mg/kg | 50 | 100 | <1 | 1 |
| Nickel | mg/kg | 30 | 60 | <0.5 | 0.5 |
| Zinc | mg/kg | 150 | 300 | 3 | 9.7 |
| Mercury | mg/kg | 0.5 | 1 | <0.05 | <0.05 |
| Rubber, plastic, bitumen, paper, cloth, paint and wood | % | 0.05 | 0.1 | <0.1 | <0.1 |

SPOCAS analysis confirmed the presence of acid sulfate soils below 3mbgs in low concentrations.

## 5 CONCLUSION

Based on the data presented, the sand as described in Section 4.1 meets the criteria for the ENM Exemption to a depth of 3mbgs in the northwest portion of site. Dark brown sand excavated from below 3mbgs in the northwest portion of site contained low concentrations of potential acid sulfate soil therefore cannot be classified as ENM. However the concentration of potential of acid sulfate soil is not sufficient to trigger further management. The dark brown sand should be stockpiled separately and monitored daily to assess sulfuric acid generation.

This report should be read in conjunction with MBES 2017-Report-Rev1.

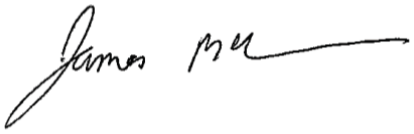
The findings contained in this report are the result of discrete / specific methodologies used in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general condition of the stockpile sampled. This report has been provided by MBES for the benefit of MIDAL only.



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ABN 82 131 293 822

We trust this meets your requirements at this time. Should you have any questions, please do not hesitate to contact the undersigned.

For and on behalf of MB Engineering Solutions Pty Ltd



**James McMahon**

**Principal Environmental Scientist**

**Attachments**
Figure 1
Table 2
Laboratory Certificates



MB Engineering Solutions Pty Ltd
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The Junction NSW 2291
ABN 82 131 293 822




| | | | | | | |
|---|---|---|---|---|---|---|
| **Drawing Number** | Figure 1 | **Scale** | Not to Scale | **MIDAL CABLES PROJECT TOMAGO** | | |
| **Title** | ENM Sampling Locations | **Page Size** | A3 | | | |
| **Client** | Midal Cable International Pty Ltd | **Revision** | 0 | **North →** | **Legend** | ⊙ Approximate bore hole location |
| **Site** | Lot 11 DP 270328 McIntyre Rd, Tomago NSW | | | | | Approximate site boundary |

MB ENGINEERING SOLUTIONS

ENGINEERING SOLUTIONS

**TABLE 2**
**Midal Cables International P/L**
**Excavated Natural Material Assessment**

21 May 2013

| | | Maximum average concentration for characterisation | Absolute maximum concentration | **Description** | Building1a | Building1b | Building1c | Building1d | Building1e | QC9 | %RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |
| | | | | **Sample Date** | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | 9/1/2013 | |
| | | | | **Matrix** | Soil | Soil | Soil | Soil | Soil | Soil | |
| **Analyte Name** | **Units** | | | **Reporting Limit** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | |
| Benzene | mg/kg | NA | 0.5 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | |
| Toluene | mg/kg | NA | 65 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | |
| Ethylbenzene | mg/kg | NA | 25 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | |
| Total Xylenes | mg/kg | NA | 15 | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | |
| TRH C10-C36 Total | mg/kg | 250 | 500 | 110 | <110 | <110 | <110 | <110 | <110 | <110 | |
| Benzo(a)pyrene | mg/kg | 0.5 | 1 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | |
| Total PAH | mg/kg | 20 | 40 | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | |
| pH | No unit | 5 to 9 | 4.5 to 10 | 0 | **5.8** | **5.7** | **5.7** | **5.5** | **6.6** | **6.4** | **3%** |
| Conductivity | dS/m | 1.5 | 3 | 1 | **0.01** | **0.01** | **0.01** | **0.01** | **0.02** | **0.02** | **21%** |
| Arsenic | mg/kg | 20 | 40 | 3 | <3 | <3 | <3 | <3 | <3 | <3 | |
| Cadmium | mg/kg | 0.5 | 1 | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | |
| Chromium | mg/kg | 75 | 150 | 0.3 | **1.4** | **1.1** | **0.8** | **1.3** | **1.3** | **1.0** | **30%** |
| Copper | mg/kg | 100 | 200 | 0.5 | <0.5 | <0.5 | <0.5 | 0.6 | <0.5 | <0.5 | |
| Lead | mg/kg | 50 | 100 | 1 | <1 | <1 | <1 | 1 | <1 | <1 | |
| Nickel | mg/kg | 30 | 60 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.5 | <0.5 | |
| Zinc | mg/kg | 150 | 300 | 0.5 | <0.5 | <0.5 | <0.5 | **9.7** | **6.6** | **3.8** | **74%** |
| Mercury | mg/kg | 0.5 | 1 | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | |
| Rubber, plastic, bitumen, paper, cloth, paint and wood | % | 0.05 | 0.1% | 0 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | |

# ANALYTICAL REPORT

WORLD RECOGNISED ACCREDITATION

## CLIENT DETAILS

| | |
|---|---|
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| Client | MB Engineering Solutions |
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| Facsimile | +61 2 4913 5372 |
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| Project | **MBE2017** |
| Order Number | **MBE2017** |
| Samples | 77 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE114571 R0** |
| Report Number | 0000048699 |
| Date Reported | 17 Jan 2013 |
| Date Received | 10 Jan 2013 |

## COMMENTS

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

## SIGNATORIES

Andy Sutton
Organics Chemist

Dong Liang
Inorganics Metals Team Leader

Kamrul Ahsan
Metals Chemist

Ly Kim Ha
Organics Supervisor

Snezana Kostoska
Inorganics Chemist

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.001<br>Soil<br>09 Jan 2013<br>TP1 1m | SE114571.002<br>Soil<br>09 Jan 2013<br>TP1 2m | SE114571.003<br>Soil<br>09 Jan 2013<br>TP2 1m | SE114571.004<br>Soil<br>09 Jan 2013<br>TP2 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **83** | **93** | **92** | **96** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **94** | **99** | **101** | **103** |
| d8-toluene (Surrogate) | % | - | **87** | **93** | **91** | **97** |
| Bromofluorobenzene (Surrogate) | % | - | **101** | **99** | **92** | **104** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.001<br>Soil<br>09 Jan 2013<br>TP1 1m | SE114571.002<br>Soil<br>09 Jan 2013<br>TP1 2m | SE114571.003<br>Soil<br>09 Jan 2013<br>TP2 1m | SE114571.004<br>Soil<br>09 Jan 2013<br>TP2 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **120** | **106** | **112** | **110** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **112** | **98** | **106** | **102** |
| d14-p-terphenyl (Surrogate) | % | - | | **120** | **108** | **112** | **114** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.8** | **6.2** | **5.2** | **6.5** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.001<br>Soil<br>09 Jan 2013<br>TP1 1m | SE114571.002<br>Soil<br>09 Jan 2013<br>TP1 2m | SE114571.003<br>Soil<br>09 Jan 2013<br>TP2 1m | SE114571.004<br>Soil<br>09 Jan 2013<br>TP2 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **19** | **18** | **21** | **22** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **2.1** | **1.9** | **1.1** | **1.8** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | <1 | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **0.8** | **0.6** | **1.3** | **7.6** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **3.3** | **2.4** | **3.0** | **3.0** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.005<br>Soil<br>09 Jan 2013<br>TP3 1m | SE114571.006<br>Soil<br>09 Jan 2013<br>TP3 2m | SE114571.007<br>Soil<br>09 Jan 2013<br>TP4 1m | SE114571.008<br>Soil<br>09 Jan 2013<br>TP4 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **93** | **80** | **88** | **99** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **95** | **83** | **102** | **107** |
| d8-toluene (Surrogate) | % | - | **87** | **72** | **86** | **97** |
| Bromofluorobenzene (Surrogate) | % | - | **94** | **83** | **95** | **101** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.005<br>Soil<br>09 Jan 2013<br>TP3 1m | SE114571.006<br>Soil<br>09 Jan 2013<br>TP3 2m | SE114571.007<br>Soil<br>09 Jan 2013<br>TP4 1m | SE114571.008<br>Soil<br>09 Jan 2013<br>TP4 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **108** | **110** | **104** | **108** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **100** | **100** | **98** | **102** |
| d14-p-terphenyl (Surrogate) | % | - | | **112** | **114** | **112** | **114** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.3** | **6.4** | **6.1** | **5.9** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.005<br>Soil<br>09 Jan 2013<br>TP3 1m | SE114571.006<br>Soil<br>09 Jan 2013<br>TP3 2m | SE114571.007<br>Soil<br>09 Jan 2013<br>TP4 1m | SE114571.008<br>Soil<br>09 Jan 2013<br>TP4 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **24** | **14** | **10** | **6** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.5** | **1.1** | **1.1** | **1.1** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | <1 | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **3.5** | **1.8** | **1.4** | **1.3** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **3.8** | **4.9** | **3.5** | **4.3** |

| Parameter | Units | LOR | Sample Number: SE114571.009<br>Sample Matrix: Soil<br>Sample Date: 09 Jan 2013<br>Sample Name: TP5 1m | SE114571.010<br>Soil<br>09 Jan 2013<br>TP5 2m | SE114571.011<br>Soil<br>09 Jan 2013<br>TP6 1m | SE114571.012<br>Soil<br>09 Jan 2013<br>TP6 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **88** | **106** | **96** | **96** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **94** | **109** | **99** | **102** |
| d8-toluene (Surrogate) | % | - | **86** | **99** | **92** | **89** |
| Bromofluorobenzene (Surrogate) | % | - | **97** | **101** | **99** | **96** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.009<br>Soil<br>09 Jan 2013<br>TP5 1m | SE114571.010<br>Soil<br>09 Jan 2013<br>TP5 2m | SE114571.011<br>Soil<br>09 Jan 2013<br>TP6 1m | SE114571.012<br>Soil<br>09 Jan 2013<br>TP6 2m |
|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **112** | **104** | **104** | **104** |
| 2-fluorobiphenyl (Surrogate) | % | - | **106** | **100** | **100** | **98** |
| d14-p-terphenyl (Surrogate) | % | - | **118** | **116** | **116** | **112** |
| **pH in soil (1:5) Method: AN101** | | | | | | |
| pH | No unit | - | **5.9** | **6.0** | **6.6** | **6.3** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.009<br>Soil<br>09 Jan 2013<br>TP5 1m | SE114571.010<br>Soil<br>09 Jan 2013<br>TP5 2m | SE114571.011<br>Soil<br>09 Jan 2013<br>TP6 1m | SE114571.012<br>Soil<br>09 Jan 2013<br>TP6 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **14** | **16** | **14** | **13** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.6** | **0.7** | **1.5** | **1.0** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | **1** | <1 | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **6.1** | **4.8** | **1.1** | **23** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **4.3** | **3.2** | **4.1** | **4.3** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.013<br>Soil<br>09 Jan 2013<br>TP7 1m | SE114571.014<br>Soil<br>09 Jan 2013<br>TP7 2m | SE114571.015<br>Soil<br>09 Jan 2013<br>TP8 1m | SE114571.016<br>Soil<br>09 Jan 2013<br>TP8 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **92** | **82** | **94** | **103** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **99** | **92** | **111** | **109** |
| d8-toluene (Surrogate) | % | - | **84** | **73** | **78** | **91** |
| Bromofluorobenzene (Surrogate) | % | - | **93** | **82** | **104** | **106** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.013<br>Soil<br>09 Jan 2013<br>TP7 1m | SE114571.014<br>Soil<br>09 Jan 2013<br>TP7 2m | SE114571.015<br>Soil<br>09 Jan 2013<br>TP8 1m | SE114571.016<br>Soil<br>09 Jan 2013<br>TP8 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **108** | **104** | **108** | **106** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **102** | **100** | **100** | **102** |
| d14-p-terphenyl (Surrogate) | % | - | | **114** | **112** | **114** | **112** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.8** | **6.2** | **6.7** | **6.3** |

| Parameter | Units | LOR | Sample Number: SE114571.013<br>Sample Matrix: Soil<br>Sample Date: 09 Jan 2013<br>Sample Name: TP7 1m | SE114571.014<br>Soil<br>09 Jan 2013<br>TP7 2m | SE114571.015<br>Soil<br>09 Jan 2013<br>TP8 1m | SE114571.016<br>Soil<br>09 Jan 2013<br>TP8 2m |
|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | **34** | **24** | **8** | **5** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | |
| Arsenic, As | mg/kg | 3 | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **17** | **9.1** | **1.8** | **2.0** |
| Copper, Cu | mg/kg | 0.5 | **9.7** | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | **12** | **3** | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | **4.3** | **0.6** | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | **170** | **3.9** | **2.7** | **0.7** |
| **Mercury in Soil Method: AN312** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | |
| % Moisture | % | 0.5 | **7.8** | **23** | **5.5** | **4.5** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.017<br>Soil<br>09 Jan 2013<br>TP9 1m | SE114571.018<br>Soil<br>09 Jan 2013<br>TP9 2m | SE114571.019<br>Soil<br>09 Jan 2013<br>TP10 1m | SE114571.020<br>Soil<br>09 Jan 2013<br>TP10 2m |
|---|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Benzene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | | **99** | **96** | **85** | **89** |
| d4-1,2-dichloroethane (Surrogate) | % | - | | **111** | **104** | **95** | **106** |
| d8-toluene (Surrogate) | % | - | | **88** | **85** | **74** | **81** |
| Bromofluorobenzene (Surrogate) | % | - | | **97** | **95** | **76** | **96** |
| Totals | | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | | |
| TRH C10-C14 | mg/kg | 20 | | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.017<br>Soil<br>09 Jan 2013<br>TP9 1m | SE114571.018<br>Soil<br>09 Jan 2013<br>TP9 2m | SE114571.019<br>Soil<br>09 Jan 2013<br>TP10 1m | SE114571.020<br>Soil<br>09 Jan 2013<br>TP10 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **96** | **84** | **102** | **100** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **92** | **86** | **96** | **94** |
| d14-p-terphenyl (Surrogate) | % | - | | **112** | **104** | **104** | **108** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **7.1** | **5.8** | **4.7** | **5.6** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.017<br>Soil<br>09 Jan 2013<br>TP9 1m | SE114571.018<br>Soil<br>09 Jan 2013<br>TP9 2m | SE114571.019<br>Soil<br>09 Jan 2013<br>TP10 1m | SE114571.020<br>Soil<br>09 Jan 2013<br>TP10 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **16** | **8** | **24** | **26** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.4** | **1.8** | **2.3** | **2.2** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | <1 | <1 | **1** |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | **0.6** |
| Zinc, Zn | mg/kg | 0.5 | | **1.4** | **3.1** | **12** | **25** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **21** | **22** | **4.0** | **4.7** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.021<br>Soil<br>09 Jan 2013<br>TP11 1m | SE114571.022<br>Soil<br>09 Jan 2013<br>TP11 2m | SE114571.023<br>Soil<br>09 Jan 2013<br>TP12 1m | SE114571.024<br>Soil<br>09 Jan 2013<br>TP12 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **99** | **91** | **85** | **79** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **108** | **97** | **97** | **87** |
| d8-toluene (Surrogate) | % | - | **97** | **79** | **74** | **73** |
| Bromofluorobenzene (Surrogate) | % | - | **105** | **88** | **84** | **98** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.021<br>Soil<br>09 Jan 2013<br>TP11 1m | SE114571.022<br>Soil<br>09 Jan 2013<br>TP11 2m | SE114571.023<br>Soil<br>09 Jan 2013<br>TP12 1m | SE114571.024<br>Soil<br>09 Jan 2013<br>TP12 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **100** | **102** | **106** | **100** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **98** | **94** | **98** | **94** |
| d14-p-terphenyl (Surrogate) | % | - | | **110** | **108** | **110** | **106** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **7.6** | **8.2** | **6.4** | **6.6** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.021<br>Soil<br>09 Jan 2013<br>TP11 1m | SE114571.022<br>Soil<br>09 Jan 2013<br>TP11 2m | SE114571.023<br>Soil<br>09 Jan 2013<br>TP12 1m | SE114571.024<br>Soil<br>09 Jan 2013<br>TP12 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **35** | **43** | **13** | **17** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **2.3** | **2.7** | **1.6** | **1.1** |
| Copper, Cu | mg/kg | 0.5 | | **1.5** | **2.6** | **0.5** | <0.5 |
| Lead, Pb | mg/kg | 1 | | **2** | **3** | **1** | <1 |
| Nickel, Ni | mg/kg | 0.5 | | **0.9** | **1.5** | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **46** | **67** | **6.0** | **1.5** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **5.1** | **4.3** | **5.4** | **14** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.025<br>Soil<br>09 Jan 2013<br>TP13 1m | SE114571.026<br>Soil<br>09 Jan 2013<br>TP13 2m | SE114571.027<br>Soil<br>09 Jan 2013<br>TP14 1m | SE114571.028<br>Soil<br>09 Jan 2013<br>TP14 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **84** | **87** | **102** | **87** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **85** | **97** | **109** | **93** |
| d8-toluene (Surrogate) | % | - | **71** | **79** | **88** | **105** |
| Bromofluorobenzene (Surrogate) | % | - | **78** | **80** | **84** | **87** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.025<br>Soil<br>09 Jan 2013<br>TP13 1m | SE114571.026<br>Soil<br>09 Jan 2013<br>TP13 2m | SE114571.027<br>Soil<br>09 Jan 2013<br>TP14 1m | SE114571.028<br>Soil<br>09 Jan 2013<br>TP14 2m |
|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **104** | **102** | **102** | **102** |
| 2-fluorobiphenyl (Surrogate) | % | - | **98** | **98** | **96** | **94** |
| d14-p-terphenyl (Surrogate) | % | - | **112** | **110** | **110** | **108** |
| **pH in soil (1:5) Method: AN101** | | | | | | |
| pH | No unit | - | **5.9** | **5.9** | **6.0** | **5.8** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.025<br>Soil<br>09 Jan 2013<br>TP13 1m | SE114571.026<br>Soil<br>09 Jan 2013<br>TP13 2m | SE114571.027<br>Soil<br>09 Jan 2013<br>TP14 1m | SE114571.028<br>Soil<br>09 Jan 2013<br>TP14 2m |
|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | **12** | **11** | **12** | **11** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | |
| Arsenic, As | mg/kg | 3 | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **1.2** | **1.2** | **1.1** | **1.1** |
| Copper, Cu | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | <1 | <1 | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | **2.0** | **1.7** | **1.4** | **1.2** |
| **Mercury in Soil Method: AN312** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | |
| % Moisture | % | 0.5 | **3.9** | **5.9** | **3.3** | **4.6** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.029<br>Soil<br>09 Jan 2013<br>TP15 1m | SE114571.030<br>Soil<br>09 Jan 2013<br>TP15 2m | SE114571.031<br>Soil<br>09 Jan 2013<br>TP16 1m | SE114571.032<br>Soil<br>09 Jan 2013<br>TP16 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **90** | **87** | **89** | **108** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **98** | **99** | **106** | **114** |
| d8-toluene (Surrogate) | % | - | **73** | **73** | **90** | **100** |
| Bromofluorobenzene (Surrogate) | % | - | **72** | **77** | **88** | **106** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.029<br>Soil<br>09 Jan 2013<br>TP15 1m | SE114571.030<br>Soil<br>09 Jan 2013<br>TP15 2m | SE114571.031<br>Soil<br>09 Jan 2013<br>TP16 1m | SE114571.032<br>Soil<br>09 Jan 2013<br>TP16 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **100** | **100** | **96** | **104** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **96** | **96** | **94** | **96** |
| d14-p-terphenyl (Surrogate) | % | - | | **110** | **110** | **112** | **108** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **5.8** | **5.6** | **5.1** | **6.1** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.029<br>Soil<br>09 Jan 2013<br>TP15 1m | SE114571.030<br>Soil<br>09 Jan 2013<br>TP15 2m | SE114571.031<br>Soil<br>09 Jan 2013<br>TP16 1m | SE114571.032<br>Soil<br>09 Jan 2013<br>TP16 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **9** | **6** | **37** | **6** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.3** | **1.2** | **1.1** | **1.6** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | <1 | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **1.5** | **1.2** | **1.3** | **0.7** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **6.1** | **6.3** | **3.2** | **6.6** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.033<br>Soil<br>09 Jan 2013<br>TP17 1m | SE114571.034<br>Soil<br>09 Jan 2013<br>TP17 2m | SE114571.035<br>Soil<br>09 Jan 2013<br>TP18 1m | SE114571.036<br>Soil<br>09 Jan 2013<br>TP18 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **89** | **85** | **92** | **85** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **97** | **94** | **102** | **94** |
| d8-toluene (Surrogate) | % | - | **84** | **77** | **81** | **76** |
| Bromofluorobenzene (Surrogate) | % | - | **89** | **82** | **93** | **77** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.033<br>Soil<br>09 Jan 2013<br>TP17 1m | SE114571.034<br>Soil<br>09 Jan 2013<br>TP17 2m | SE114571.035<br>Soil<br>09 Jan 2013<br>TP18 1m | SE114571.036<br>Soil<br>09 Jan 2013<br>TP18 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **106** | **104** | **102** | **100** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **98** | **98** | **94** | **96** |
| d14-p-terphenyl (Surrogate) | % | - | | **114** | **116** | **110** | **114** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.5** | **6.6** | **6.8** | **6.7** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.033<br>Soil<br>09 Jan 2013<br>TP17 1m | SE114571.034<br>Soil<br>09 Jan 2013<br>TP17 2m | SE114571.035<br>Soil<br>09 Jan 2013<br>TP18 1m | SE114571.036<br>Soil<br>09 Jan 2013<br>TP18 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **15** | **18** | **24** | **35** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.4** | **0.8** | **2.5** | **6.1** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | **0.5** | **1.3** |
| Lead, Pb | mg/kg | 1 | | **1** | <1 | **1** | **4** |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | **0.6** |
| Zinc, Zn | mg/kg | 0.5 | | **50** | **12** | **24** | **50** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **5.5** | **8.5** | **5.3** | **16** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.037<br>Soil<br>09 Jan 2013<br>TP19 1m | SE114571.038<br>Soil<br>09 Jan 2013<br>TP19 2m | SE114571.039<br>Soil<br>09 Jan 2013<br>TP20 1m | SE114571.040<br>Soil<br>09 Jan 2013<br>TP20 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **88** | **103** | **90** | **91** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **95** | **109** | **98** | **91** |
| d8-toluene (Surrogate) | % | - | **82** | **90** | **83** | **71** |
| Bromofluorobenzene (Surrogate) | % | - | **92** | **96** | **99** | **78** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.037<br>Soil<br>09 Jan 2013<br>TP19 1m | SE114571.038<br>Soil<br>09 Jan 2013<br>TP19 2m | SE114571.039<br>Soil<br>09 Jan 2013<br>TP20 1m | SE114571.040<br>Soil<br>09 Jan 2013<br>TP20 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **108** | **106** | **83** | **92** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **100** | **98** | **78** | **88** |
| d14-p-terphenyl (Surrogate) | % | - | | **108** | **112** | **91** | **102** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.9** | **6.6** | **4.9** | **4.5** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.037<br>Soil<br>09 Jan 2013<br>TP19 1m | SE114571.038<br>Soil<br>09 Jan 2013<br>TP19 2m | SE114571.039<br>Soil<br>09 Jan 2013<br>TP20 1m | SE114571.040<br>Soil<br>09 Jan 2013<br>TP20 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **38** | **23** | **7** | **20** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **4.6** | **1.9** | **1.0** | **1.8** |
| Copper, Cu | mg/kg | 0.5 | | **5.9** | **1.3** | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | **7** | **2** | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | **3.3** | **0.9** | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **140** | **29** | **1.0** | **1.8** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **5.5** | **10** | **2.1** | **2.6** |

| Parameter | Units | LOR | Sample Number: SE114571.041<br>Sample Matrix: Soil<br>Sample Date: 09 Jan 2013<br>Sample Name: TP21 1m | SE114571.042<br>Soil<br>09 Jan 2013<br>TP21 2m | SE114571.043<br>Soil<br>09 Jan 2013<br>TP22 1m | SE114571.044<br>Soil<br>09 Jan 2013<br>TP22 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **89** | **78** | **79** | **81** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **92** | **80** | **78** | **83** |
| d8-toluene (Surrogate) | % | - | **93** | **84** | **84** | **85** |
| Bromofluorobenzene (Surrogate) | % | - | **97** | **83** | **81** | **80** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.041<br>Soil<br>09 Jan 2013<br>TP21 1m | SE114571.042<br>Soil<br>09 Jan 2013<br>TP21 2m | SE114571.043<br>Soil<br>09 Jan 2013<br>TP22 1m | SE114571.044<br>Soil<br>09 Jan 2013<br>TP22 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **96** | **100** | **98** | **98** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **86** | **90** | **90** | **92** |
| d14-p-terphenyl (Surrogate) | % | - | | **98** | **102** | **104** | **106** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **5.8** | **5.9** | **5.8** | **6.1** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.041<br>Soil<br>09 Jan 2013<br>TP21 1m | SE114571.042<br>Soil<br>09 Jan 2013<br>TP21 2m | SE114571.043<br>Soil<br>09 Jan 2013<br>TP22 1m | SE114571.044<br>Soil<br>09 Jan 2013<br>TP22 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **10** | **8** | **13** | **19** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.3** | **1.4** | **0.7** | **2.0** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | **1.1** |
| Lead, Pb | mg/kg | 1 | | <1 | <1 | <1 | **2** |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | **0.5** |
| Zinc, Zn | mg/kg | 0.5 | | **2.4** | **1.1** | **1.8** | **42** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **6.6** | **4.8** | **3.6** | **4.6** |

| Parameter | Units | LOR | Sample Number SE114571.045 Sample Matrix Soil Sample Date 09 Jan 2013 Sample Name TP23 1m | SE114571.046 Soil 09 Jan 2013 TP23 2m | SE114571.047 Soil 09 Jan 2013 TP24 1m | SE114571.048 Soil 09 Jan 2013 TP24 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **103** | **82** | **93** | **88** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **103** | **84** | **93** | **87** |
| d8-toluene (Surrogate) | % | - | **111** | **85** | **101** | **93** |
| Bromofluorobenzene (Surrogate) | % | - | **106** | **86** | **95** | **88** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.045<br>Soil<br>09 Jan 2013<br>TP23 1m | SE114571.046<br>Soil<br>09 Jan 2013<br>TP23 2m | SE114571.047<br>Soil<br>09 Jan 2013<br>TP24 1m | SE114571.048<br>Soil<br>09 Jan 2013<br>TP24 2m |
|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **98** | **94** | **98** | **94** |
| 2-fluorobiphenyl (Surrogate) | % | - | **90** | **88** | **90** | **88** |
| d14-p-terphenyl (Surrogate) | % | - | **102** | **100** | **104** | **100** |
| **pH in soil (1:5) Method: AN101** | | | | | | |
| pH | No unit | - | **6.3** | **6.0** | **6.3** | **6.4** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.045<br>Soil<br>09 Jan 2013<br>TP23 1m | SE114571.046<br>Soil<br>09 Jan 2013<br>TP23 2m | SE114571.047<br>Soil<br>09 Jan 2013<br>TP24 1m | SE114571.048<br>Soil<br>09 Jan 2013<br>TP24 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **26** | **21** | **12** | **11** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **2.4** | **2.0** | **1.6** | **1.9** |
| Copper, Cu | mg/kg | 0.5 | | **1.4** | <0.5 | **1.0** | <0.5 |
| Lead, Pb | mg/kg | 1 | | **3** | **1** | **2** | **1** |
| Nickel, Ni | mg/kg | 0.5 | | **1.0** | **0.6** | <0.5 | **0.6** |
| Zinc, Zn | mg/kg | 0.5 | | **120** | **12** | **21** | **13** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **3.3** | **21** | **3.2** | **16** |

| Parameter | Units | LOR | Sample Number: SE114571.049<br>Sample Matrix: Soil<br>Sample Date: 09 Jan 2013<br>Sample Name: TP25 1m | SE114571.050<br>Soil<br>09 Jan 2013<br>TP25 2m | SE114571.051<br>Soil<br>09 Jan 2013<br>TP26 1m | SE114571.052<br>Soil<br>09 Jan 2013<br>TP26 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **89** | **90** | **92** | **86** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **89** | **92** | **93** | **88** |
| d8-toluene (Surrogate) | % | - | **94** | **96** | **97** | **86** |
| Bromofluorobenzene (Surrogate) | % | - | **89** | **88** | **93** | **84** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.049<br>Soil<br>09 Jan 2013<br>TP25 1m | SE114571.050<br>Soil<br>09 Jan 2013<br>TP25 2m | SE114571.051<br>Soil<br>09 Jan 2013<br>TP26 1m | SE114571.052<br>Soil<br>09 Jan 2013<br>TP26 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **96** | **98** | **96** | **96** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **90** | **92** | **90** | **88** |
| d14-p-terphenyl (Surrogate) | % | - | | **104** | **108** | **102** | **104** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.7** | **6.7** | **5.7** | **5.7** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.049<br>Soil<br>09 Jan 2013<br>TP25 1m | SE114571.050<br>Soil<br>09 Jan 2013<br>TP25 2m | SE114571.051<br>Soil<br>09 Jan 2013<br>TP26 1m | SE114571.052<br>Soil<br>09 Jan 2013<br>TP26 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **25** | **22** | **12** | **10** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.7** | **1.7** | **1.6** | **1.1** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | **1.1** | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | **2** | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | **0.7** | <0.5 | **0.6** | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **7.4** | **30** | **3.3** | **7.9** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **4.0** | **19** | **4.4** | **9.3** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.053<br>Soil<br>09 Jan 2013<br>TP27 1m | SE114571.054<br>Soil<br>09 Jan 2013<br>TP27 2m | SE114571.055<br>Soil<br>09 Jan 2013<br>TP28 1m | SE114571.056<br>Soil<br>09 Jan 2013<br>TP28 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **93** | **91** | **86** | **82** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **94** | **90** | **88** | **89** |
| d8-toluene (Surrogate) | % | - | **98** | **92** | **88** | **78** |
| Bromofluorobenzene (Surrogate) | % | - | **92** | **84** | **75** | **71** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.053<br>Soil<br>09 Jan 2013<br>TP27 1m | SE114571.054<br>Soil<br>09 Jan 2013<br>TP27 2m | SE114571.055<br>Soil<br>09 Jan 2013<br>TP28 1m | SE114571.056<br>Soil<br>09 Jan 2013<br>TP28 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **96** | **96** | **112** | **94** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **88** | **90** | **102** | **88** |
| d14-p-terphenyl (Surrogate) | % | - | | **106** | **106** | **118** | **102** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.4** | **5.3** | **6.0** | **6.2** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.053<br>Soil<br>09 Jan 2013<br>TP27 1m | SE114571.054<br>Soil<br>09 Jan 2013<br>TP27 2m | SE114571.055<br>Soil<br>09 Jan 2013<br>TP28 1m | SE114571.056<br>Soil<br>09 Jan 2013<br>TP28 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **23** | **11** | **11** | **14** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.7** | **1.4** | **1.9** | **1.7** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | <1 | **1** | **1** |
| Nickel, Ni | mg/kg | 0.5 | | **0.8** | <0.5 | **0.6** | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **8.0** | **6.6** | **56** | **34** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **4.1** | **22** | **5.3** | **22** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.057<br>Soil<br>09 Jan 2013<br>TP29 1m | SE114571.058<br>Soil<br>09 Jan 2013<br>TP29 2m | SE114571.059<br>Soil<br>09 Jan 2013<br>TP30 1m | SE114571.060<br>Soil<br>09 Jan 2013<br>TP30 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **72** | **88** | **74** | **74** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **76** | **93** | **85** | **81** |
| d8-toluene (Surrogate) | % | - | **75** | **86** | **72** | **71** |
| Bromofluorobenzene (Surrogate) | % | - | **70** | **78** | **72** | **73** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.057<br>Soil<br>09 Jan 2013<br>TP29 1m | SE114571.058<br>Soil<br>09 Jan 2013<br>TP29 2m | SE114571.059<br>Soil<br>09 Jan 2013<br>TP30 1m | SE114571.060<br>Soil<br>09 Jan 2013<br>TP30 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **102** | **90** | **94** | **102** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **94** | **84** | **86** | **94** |
| d14-p-terphenyl (Surrogate) | % | - | | **110** | **98** | **100** | **112** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.0** | **5.9** | **6.2** | **6.5** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.057<br>Soil<br>09 Jan 2013<br>TP29 1m | SE114571.058<br>Soil<br>09 Jan 2013<br>TP29 2m | SE114571.059<br>Soil<br>09 Jan 2013<br>TP30 1m | SE114571.060<br>Soil<br>09 Jan 2013<br>TP30 2m |
|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | **19** | **15** | **22** | **21** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | |
| Arsenic, As | mg/kg | 3 | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **2.5** | **2.7** | **2.4** | **1.5** |
| Copper, Cu | mg/kg | 0.5 | <0.5 | **1.8** | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | <1 | **3** | **1** | <1 |
| Nickel, Ni | mg/kg | 0.5 | **0.8** | **0.6** | **0.6** | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | **35** | **140** | **24** | **24** |
| **Mercury in Soil Method: AN312** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | |
| % Moisture | % | 0.5 | **22** | **22** | **22** | **22** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.061<br>Soil<br>09 Jan 2013<br>TP31 1m | SE114571.062<br>Soil<br>09 Jan 2013<br>TP31 2m | SE114571.063<br>Soil<br>09 Jan 2013<br>TP32 1m | SE114571.064<br>Soil<br>09 Jan 2013<br>TP32 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **88** | **103** | **98** | **95** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **92** | **102** | **104** | **100** |
| d8-toluene (Surrogate) | % | - | **94** | **98** | **89** | **88** |
| Bromofluorobenzene (Surrogate) | % | - | **80** | **97** | **95** | **90** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.061<br>Soil<br>09 Jan 2013<br>TP31 1m | SE114571.062<br>Soil<br>09 Jan 2013<br>TP31 2m | SE114571.063<br>Soil<br>09 Jan 2013<br>TP32 1m | SE114571.064<br>Soil<br>09 Jan 2013<br>TP32 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **84** | **98** | **98** | **92** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **78** | **88** | **90** | **86** |
| d14-p-terphenyl (Surrogate) | % | - | | **82** | **106** | **104** | **100** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.7** | **6.8** | **6.0** | **5.8** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.061<br>Soil<br>09 Jan 2013<br>TP31 1m | SE114571.062<br>Soil<br>09 Jan 2013<br>TP31 2m | SE114571.063<br>Soil<br>09 Jan 2013<br>TP32 1m | SE114571.064<br>Soil<br>09 Jan 2013<br>TP32 2m |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **28** | **17** | **18** | **18** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **2.2** | **2.3** | **2.0** | **1.3** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | <1 | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | <0.5 | **0.5** | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **34** | **3.5** | **1.6** | **4.8** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **3.8** | **5.8** | **2.0** | **2.2** |

| Parameter | Units | LOR | Sample Number: SE114571.065<br>Sample Matrix: Soil<br>Sample Date: 09 Jan 2013<br>Sample Name: TP33 1m | SE114571.066<br>Soil<br>09 Jan 2013<br>TP33 2m | SE114571.067<br>Soil<br>09 Jan 2013<br>TP34 1m | SE114571.068<br>Soil<br>09 Jan 2013<br>TP34 2m |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **90** | **89** | **97** | **94** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **96** | **104** | **103** | **101** |
| d8-toluene (Surrogate) | % | - | **89** | **90** | **98** | **92** |
| Bromofluorobenzene (Surrogate) | % | - | **81** | **83** | **78** | **91** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | **21** | **240** |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | **400** | **1600** |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | **330** | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | **740** | **1900** |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | **750** | **1900** |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | **52** | **490** |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | **580** | **1400** |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.065<br>Soil<br>09 Jan 2013<br>TP33 1m | SE114571.066<br>Soil<br>09 Jan 2013<br>TP33 2m | SE114571.067<br>Soil<br>09 Jan 2013<br>TP34 1m | SE114571.068<br>Soil<br>09 Jan 2013<br>TP34 2m |
|---|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | **98** | **102** | **100** | **106** |
| 2-fluorobiphenyl (Surrogate) | % | - | | **100** | **94** | **96** | **90** |
| d14-p-terphenyl (Surrogate) | % | - | | **106** | **104** | **104** | **104** |
| **pH in soil (1:5) Method: AN101** | | | | | | | |
| pH | No unit | - | | **6.4** | **6.5** | **6.4** | **6.3** |

| Parameter | Units | LOR | Sample Number: SE114571.065<br>Sample Matrix: Soil<br>Sample Date: 09 Jan 2013<br>Sample Name: TP33 1m | SE114571.066<br>Soil<br>09 Jan 2013<br>TP33 2m | SE114571.067<br>Soil<br>09 Jan 2013<br>TP34 1m | SE114571.068<br>Soil<br>09 Jan 2013<br>TP34 2m |
|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | **25** | **13** | **25** | **7** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | |
| Arsenic, As | mg/kg | 3 | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **2.1** | **2.7** | **4.1** | **1.3** |
| Copper, Cu | mg/kg | 0.5 | <0.5 | **0.6** | **1.2** | <0.5 |
| Lead, Pb | mg/kg | 1 | <1 | **2** | **5** | <1 |
| Nickel, Ni | mg/kg | 0.5 | <0.5 | **0.6** | **0.6** | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | **92** | **190** | **660** | **13** |
| **Mercury in Soil Method: AN312** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | |
| % Moisture | % | 0.5 | **4.5** | **2.9** | **6.1** | **4.9** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.069<br>Soil<br>09 Jan 2013<br>TP35 1m | SE114571.070<br>Soil<br>09 Jan 2013<br>TP35 2m | SE114571.071<br>Soil<br>09 Jan 2013<br>QC5 | SE114571.072<br>Soil<br>09 Jan 2013<br>QC6 |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | **90** | **94** | **87** | **97** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **97** | **99** | **101** | **102** |
| d8-toluene (Surrogate) | % | - | **87** | **92** | **94** | **95** |
| Bromofluorobenzene (Surrogate) | % | - | **85** | **89** | **79** | **108** |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.069<br>Soil<br>09 Jan 2013<br>TP35 1m | SE114571.070<br>Soil<br>09 Jan 2013<br>TP35 2m | SE114571.071<br>Soil<br>09 Jan 2013<br>QC5 | SE114571.072<br>Soil<br>09 Jan 2013<br>QC6 |
|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **104** | **104** | **104** | **106** |
| 2-fluorobiphenyl (Surrogate) | % | - | **94** | **92** | **92** | **92** |
| d14-p-terphenyl (Surrogate) | % | - | **102** | **104** | **104** | **106** |
| **pH in soil (1:5) Method: AN101** | | | | | | |
| pH | No unit | - | **6.2** | **7.5** | **7.4** | **7.0** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE114571.069<br>Soil<br>09 Jan 2013<br>TP35 1m | SE114571.070<br>Soil<br>09 Jan 2013<br>TP35 2m | SE114571.071<br>Soil<br>09 Jan 2013<br>QC5 | SE114571.072<br>Soil<br>09 Jan 2013<br>QC6 |
|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | **8** | **57** | **11** | **23** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | |
| Arsenic, As | mg/kg | 3 | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **1.4** | **2.4** | **1.5** | **2.2** |
| Copper, Cu | mg/kg | 0.5 | <0.5 | **3.4** | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | <1 | **6** | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | <0.5 | **0.7** | **0.6** | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | **2.1** | **110** | **1.7** | **17** |
| **Mercury in Soil Method: AN312** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | |
| % Moisture | % | 0.5 | **2.8** | **3.8** | **17** | **4.2** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.073<br>Soil<br>09 Jan 2013<br>QC7 | SE114571.074<br>Soil<br>09 Jan 2013<br>QC8 | SE114571.075<br>Soil<br>09 Jan 2013<br>QC9 | SE114571.076<br>Soil<br>09 Jan 2013<br>QC10 |
|---|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Benzene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | | **92** | **95** | **83** | **83** |
| d4-1,2-dichloroethane (Surrogate) | % | - | | **99** | **102** | **90** | **90** |
| d8-toluene (Surrogate) | % | - | | **90** | **97** | **83** | **86** |
| Bromofluorobenzene (Surrogate) | % | - | | **95** | **92** | **87** | **77** |
| Totals | | | | | | | |
| Total Xylenes* | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX* | mg/kg | - | | **0** | **0** | **0** | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | | | | | |
| TRH C10-C14 | mg/kg | 20 | | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | | <110 | <110 | <110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | | <25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | | <90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | | <120 | <120 | <120 | <120 |

| Parameter | Units | LOR | Sample Number SE114571.073 Sample Matrix Soil Sample Date 09 Jan 2013 Sample Name QC7 | SE114571.074 Soil 09 Jan 2013 QC8 | SE114571.075 Soil 09 Jan 2013 QC9 | SE114571.076 Soil 09 Jan 2013 QC10 |
|---|---|---|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | 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 |
| Benzo(a)pyrene | mg/kg | 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 |
| Dibenzo(a&h)anthracene | mg/kg | 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 |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **100** | **100** | **102** | **100** |
| 2-fluorobiphenyl (Surrogate) | % | - | **90** | **90** | **90** | **88** |
| d14-p-terphenyl (Surrogate) | % | - | **104** | **104** | **102** | **102** |
| **pH in soil (1:5) Method: AN101** | | | | | | |
| pH | No unit | - | **6.3** | **6.7** | **6.3** | **6.5** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE114571.073<br>Soil<br>09 Jan 2013<br>QC7 | SE114571.074<br>Soil<br>09 Jan 2013<br>QC8 | SE114571.075<br>Soil<br>09 Jan 2013<br>QC9 | SE114571.076<br>Soil<br>09 Jan 2013<br>QC10 |
|---|---|---|---|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | | | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | | **12** | **22** | **22** | **25** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | | | | | |
| Arsenic, As | mg/kg | 3 | | <3 | <3 | <3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | | **1.7** | **2.8** | **2.3** | **1.8** |
| Copper, Cu | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | | <1 | **1** | <1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | | **0.6** | <0.5 | <0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | | **2.4** | **19** | **1.8** | **9.3** |
| **Mercury in Soil Method: AN312** | | | | | | | |
| Mercury | mg/kg | 0.05 | | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | | | | | |
| % Moisture | % | 0.5 | | **2.4** | **4.8** | **2.5** | **5.0** |

| Parameter | Units | LOR | Sample Number SE114571.077<br>Sample Matrix Soil<br>Sample Date 09 Jan 2013<br>Sample Name QC11 |
|---|---|---|---|
| **VOC's in Soil Method: AN433/AN434** | | | |
| 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 | mg/kg | 0.1 | <0.1 |
| Surrogates | | | |
| Dibromofluoromethane (Surrogate) | % | - | **97** |
| d4-1,2-dichloroethane (Surrogate) | % | - | **108** |
| d8-toluene (Surrogate) | % | - | **98** |
| Bromofluorobenzene (Surrogate) | % | - | **98** |
| Totals | | | |
| Total Xylenes* | mg/kg | 0.3 | <0.3 |
| Total BTEX* | mg/kg | - | **0** |
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403** | | | |
| TRH C10-C14 | mg/kg | 20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 |
| TRH C10-C40 Total | mg/kg | 210 | <210 |
| TRH F Bands | | | |
| TRH >C10-C16 (F2) | mg/kg | 25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 |

| Parameter | Units | LOR | Sample Number SE114571.077<br>Sample Matrix Soil<br>Sample Date 09 Jan 2013<br>Sample Name QC11 |
|---|---|---|---|
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420** | | | |
| 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(b)fluoranthene | mg/kg | 0.1 | <0.1 |
| Benzo(k)fluoranthene | 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(a&h)anthracene | mg/kg | 0.1 | <0.1 |
| Benzo(ghi)perylene | mg/kg | 0.1 | <0.1 |
| Total PAH | mg/kg | 0.8 | <0.8 |
| Surrogates | | | |
| d5-nitrobenzene (Surrogate) | % | - | **100** |
| 2-fluorobiphenyl (Surrogate) | % | - | **88** |
| d14-p-terphenyl (Surrogate) | % | - | **102** |
| **pH in soil (1:5) Method: AN101** | | | |
| pH | No unit | - | **6.1** |

| Parameter | Units | LOR | Sample Number SE114571.077<br>Sample Matrix Soil<br>Sample Date 09 Jan 2013<br>Sample Name QC11 |
|---|---|---|---|
| **Conductivity and TDS by Calculation - Soil Method: AN106** | | | |
| Conductivity of Extract (1:5 dry sample basis) | µS/cm | 1 | **14** |
| **Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320** | | | |
| Arsenic, As | mg/kg | 3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | **1.7** |
| Copper, Cu | mg/kg | 0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | **4.6** |
| **Mercury in Soil Method: AN312** | | | |
| Mercury | mg/kg | 0.05 | <0.05 |
| **Moisture Content Method: AN002** | | | |
| % Moisture | % | 0.5 | **4.7** |

# QC SUMMARY

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.

**Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|---|
| Conductivity of Extract (1:5 dry sample basis) | LB032116 | µS/cm | 1 | <1 | 10 - 15% | 104% |
| | LB032184 | µS/cm | 1 | <1 | 4 - 6% | 104% |
| | LB032187 | µS/cm | 1 | <1 | 1 - 9% | 104% |
| | LB032189 | µS/cm | 1 | <1 | 4% | 105% |

**Mercury in Soil Method: ME-(AU)-[ENV]AN312**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery | MSD %RPD |
|---|---|---|---|---|---|---|---|---|
| Mercury | LB032162 | mg/kg | 0.05 | <0.05 | 0% | 98% | 95% | |
| | LB032196 | mg/kg | 0.05 | <0.05 | 0% | 95% | 90% | |
| | LB032222 | mg/kg | 0.05 | <0.05 | 0% | 90% | 89% | NA |
| | LB032223 | mg/kg | 0.05 | <0.05 | 0% | 97% | 89% | |
| | LB032224 | mg/kg | 0.05 | <0.05 | 9% | 103% | 93% | |

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Naphthalene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 101% | 109% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 103% | 103% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 111% | 108% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 116% | 114% |
| 2-methylnaphthalene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| 1-methylnaphthalene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Acenaphthylene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 103% | 115% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 104% | 102% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 108% | 109% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 114% | 111% |
| Acenaphthene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 105% | 116% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 107% | 105% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 115% | 113% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 120% | 117% |
| Fluorene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Phenanthrene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 108% | 116% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 112% | 109% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 118% | 114% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 124% | 122% |
| Anthracene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 108% | 115% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 106% | 106% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 117% | 114% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 119% | 123% |
| Fluoranthene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 108% | 118% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 111% | 108% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 119% | 114% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 120% | 120% |
| Pyrene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 107% | 116% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 107% | 107% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 114% | 110% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 119% | 118% |
| Benzo(a)anthracene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |

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.

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420 (continued)**

| | | | | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Benzo(a)anthracene | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Chrysene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Benzo(b)fluoranthene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Benzo(k)fluoranthene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Benzo(a)pyrene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | 108% | 118% |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | 109% | 109% |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | 118% | 114% |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | 121% | 119% |
| Indeno(1,2,3-cd)pyrene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Dibenzo(a&h)anthracene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Benzo(ghi)perylene | LB032075 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Total PAH | LB032075 | mg/kg | 0.8 | <0.8 | 0% | NA | NA |
| | LB032078 | mg/kg | 0.8 | <0.8 | 0% | NA | NA |
| | LB032079 | mg/kg | 0.8 | <0.8 | 0% | NA | NA |
| | LB032080 | mg/kg | 0.8 | <0.8 | 0% | NA | NA |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| d5-nitrobenzene (Surrogate) | LB032075 | % | - | 104% | 2 - 9% | 104% | 110% |
| | LB032078 | % | - | 104% | 0 - 6% | 102% | 102% |
| | LB032079 | % | - | 100% | 0 - 6% | 96% | 98% |
| | LB032080 | % | - | 104% | 2 - 9% | 100% | 102% |
| 2-fluorobiphenyl (Surrogate) | LB032075 | % | - | 102% | 2 - 7% | 104% | 104% |
| | LB032078 | % | - | 100% | 0 - 2% | 98% | 96% |
| | LB032079 | % | - | 94% | 2 - 5% | 94% | 90% |
| | LB032080 | % | - | 98% | 2 - 10% | 96% | 96% |
| d14-p-terphenyl (Surrogate) | LB032075 | % | - | 108% | 4 - 5% | 112% | 112% |
| | LB032078 | % | - | 108% | 0 - 2% | 110% | 112% |
| | LB032079 | % | - | 102% | 2 - 6% | 106% | 104% |
| | LB032080 | % | - | 112% | 0 - 22% | 112% | 116% |

# QC SUMMARY

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.

**pH in soil (1:5)** **Method: ME-(AU)-[ENV]AN101**

| Parameter | QC Reference | Units | LOR | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|
| pH | LB032115 | No unit | - | 2 - 3% | 101% |
| | LB032183 | No unit | - | 0 - 1% | 100% |
| | LB032186 | No unit | - | 0 - 1% | 100% |
| | LB032188 | No unit | - | 1 - 4% | 101% |

**Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest** **Method: ME-(AU)-[ENV]AN040/AN320**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Arsenic, As | LB032161 | mg/kg | 3 | <3 | 0% | 99% | 94% |
| | LB032195 | mg/kg | 3 | <3 | 0% | 97% | 86% |
| | LB032219 | mg/kg | 3 | <3 | 0% | 101% | 93% |
| | LB032220 | mg/kg | 3 | <3 | 0% | 101% | 94% |
| | LB032221 | mg/kg | 3 | <3 | | 100% | 101% |
| Cadmium, Cd | LB032161 | mg/kg | 0.3 | <0.3 | 0% | 100% | 95% |
| | LB032195 | mg/kg | 0.3 | <0.3 | 0% | 100% | 90% |
| | LB032219 | mg/kg | 0.3 | <0.3 | 0% | 101% | 95% |
| | LB032220 | mg/kg | 0.3 | <0.3 | 0% | 101% | 97% |
| | LB032221 | mg/kg | 0.3 | <0.3 | 3 - 10% | 100% | 104% |
| Chromium, Cr | LB032161 | mg/kg | 0.3 | <0.3 | 8 - 10% | 98% | 93% |
| | LB032195 | mg/kg | 0.3 | <0.3 | 4 - 10% | 97% | 87% |
| | LB032219 | mg/kg | 0.3 | <0.3 | 1 - 6% | 101% | 93% |
| | LB032220 | mg/kg | 0.3 | <0.3 | 0 - 4% | 102% | 95% |
| | LB032221 | mg/kg | 0.3 | <0.3 | | 100% | 103% |
| Copper, Cu | LB032161 | mg/kg | 0.5 | <0.5 | 0% | 102% | 97% |
| | LB032195 | mg/kg | 0.5 | <0.5 | 0 - 44% | 100% | 91% |
| | LB032219 | mg/kg | 0.5 | <0.5 | 0 - 65% | 100% | 94% |
| | LB032220 | mg/kg | 0.5 | <0.5 | 0 - 17% | 101% | 95% |
| | LB032221 | mg/kg | 0.5 | <0.5 | 2 - 8% | 99% | 103% |
| Lead, Pb | LB032161 | mg/kg | 1 | <1 | 0% | 99% | 94% |
| | LB032195 | mg/kg | 1 | <1 | 0 - 50% | 98% | 88% |
| | LB032219 | mg/kg | 1 | <1 | 21 - 34% | 101% | 95% |
| | LB032220 | mg/kg | 1 | <1 | 0 - 5% | 102% | 96% |
| | LB032221 | mg/kg | 1 | <1 | 2 - 5% | 101% | 103% |
| Nickel, Ni | LB032161 | mg/kg | 0.5 | <0.5 | 0 - 5% | 99% | 95% |
| | LB032195 | mg/kg | 0.5 | <0.5 | 0 - 17% | 98% | 89% |
| | LB032219 | mg/kg | 0.5 | <0.5 | 5 - 6% | 102% | 96% |
| | LB032220 | mg/kg | 0.5 | <0.5 | 0 - 83% | 103% | 97% |
| | LB032221 | mg/kg | 0.5 | <0.5 | | 102% | 105% |
| Zinc, Zn | LB032161 | mg/kg | 0.5 | <0.5 | 12 - 32% | 101% | 96% |
| | LB032195 | mg/kg | 0.5 | <0.5 | 0 - 7% | 100% | 97% |
| | LB032219 | mg/kg | 0.5 | <0.5 | 6 - 10% | 102% | 96% |
| | LB032220 | mg/kg | 0.5 | <0.5 | 1 - 21% | 103% | 52% |
| | LB032221 | mg/kg | 0.5 | <0.5 | 3 - 7% | 102% | 105% |

# QC SUMMARY

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 (Total Recoverable Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN403**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | LB032075 | mg/kg | 20 | <20 | 0% | 103% | 108% |
| | LB032078 | mg/kg | 20 | <20 | 0% | 100% | 100% |
| | LB032079 | mg/kg | 20 | <20 | 0% | 103% | 100% |
| | LB032080 | mg/kg | 20 | <20 | 0% | 103% | 100% |
| TRH C15-C28 | LB032075 | mg/kg | 45 | <45 | 0% | 100% | 103% |
| | LB032078 | mg/kg | 45 | <45 | 0% | 98% | 90% |
| | LB032079 | mg/kg | 45 | <45 | 0% | 103% | 100% |
| | LB032080 | mg/kg | 45 | <45 | 0% | 100% | 103% |
| TRH C29-C36 | LB032075 | mg/kg | 45 | <45 | 0% | 85% | 85% |
| | LB032078 | mg/kg | 45 | <45 | 0% | 90% | 88% |
| | LB032079 | mg/kg | 45 | <45 | 0% | 88% | 83% |
| | LB032080 | mg/kg | 45 | <45 | 0% | 95% | 88% |
| TRH C37-C40 | LB032075 | mg/kg | 100 | <100 | 0% | NA | NA |
| | LB032078 | mg/kg | 100 | <100 | 0% | NA | NA |
| | LB032079 | mg/kg | 100 | <100 | 0% | NA | NA |
| | LB032080 | mg/kg | 100 | <100 | 0% | NA | NA |
| TRH C10-C36 Total | LB032075 | mg/kg | 110 | <110 | 0% | NA | NA |
| | LB032078 | mg/kg | 110 | <110 | 0% | NA | NA |
| | LB032079 | mg/kg | 110 | <110 | 0% | NA | NA |
| | LB032080 | mg/kg | 110 | <110 | 0% | NA | NA |
| TRH C10-C40 Total | LB032075 | mg/kg | 210 | <210 | 0% | NA | NA |
| | LB032078 | mg/kg | 210 | <210 | 0% | NA | NA |
| | LB032079 | mg/kg | 210 | <210 | 0% | NA | NA |
| | LB032080 | mg/kg | 210 | <210 | 0% | NA | NA |

TRH F Bands

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| TRH >C10-C16 (F2) | LB032075 | mg/kg | 25 | <25 | 0% | 103% | 108% |
| | LB032078 | mg/kg | 25 | <25 | 0% | 100% | 100% |
| | LB032079 | mg/kg | 25 | <25 | 0% | 100% | 100% |
| | LB032080 | mg/kg | 25 | <25 | 0% | 103% | 103% |
| TRH >C16-C34 (F3) | LB032075 | mg/kg | 90 | <90 | 0% | 100% | 100% |
| | LB032078 | mg/kg | 90 | <90 | 0% | 95% | 88% |
| | LB032079 | mg/kg | 90 | <90 | 0% | 103% | 98% |
| | LB032080 | mg/kg | 90 | <90 | 0% | 100% | 100% |
| TRH >C34-C40 (F4) | LB032075 | mg/kg | 120 | <120 | 0% | 85% | NA |
| | LB032078 | mg/kg | 120 | <120 | 0% | 95% | NA |
| | LB032079 | mg/kg | 120 | <120 | 0% | 85% | NA |
| | LB032080 | mg/kg | 120 | <120 | 0% | 95% | NA |

# QC SUMMARY

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.

**VOC's in Soil Method: ME-(AU)-[ENV]AN433/AN434**

Monocyclic Aromatic Hydrocarbons

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Benzene | LB032071 | mg/kg | 0.1 | <0.1 | 0% | 109% | 94% |
| | LB032072 | mg/kg | 0.1 | <0.1 | 0% | 88% | 90% |
| | LB032073 | mg/kg | 0.1 | <0.1 | 0% | 107% | 115% |
| | LB032074 | mg/kg | 0.1 | <0.1 | 0% | 83% | 92% |
| Toluene | LB032071 | mg/kg | 0.1 | <0.1 | 0% | 101% | 89% |
| | LB032072 | mg/kg | 0.1 | <0.1 | 0% | 85% | 85% |
| | LB032073 | mg/kg | 0.1 | <0.1 | 0% | 98% | 108% |
| | LB032074 | mg/kg | 0.1 | <0.1 | 0% | 82% | 88% |
| Ethylbenzene | LB032071 | mg/kg | 0.1 | <0.1 | 0% | 97% | 89% |
| | LB032072 | mg/kg | 0.1 | <0.1 | 0% | 86% | 83% |
| | LB032073 | mg/kg | 0.1 | <0.1 | 0% | 91% | 111% |
| | LB032074 | mg/kg | 0.1 | <0.1 | 0% | 82% | 86% |
| m/p-xylene | LB032071 | mg/kg | 0.2 | <0.2 | 0% | 93% | 85% |
| | LB032072 | mg/kg | 0.2 | <0.2 | 0% | 89% | 86% |
| | LB032073 | mg/kg | 0.2 | <0.2 | 0% | 92% | 111% |
| | LB032074 | mg/kg | 0.2 | <0.2 | 0% | 80% | 83% |
| o-xylene | LB032071 | mg/kg | 0.1 | <0.1 | 0% | 100% | 93% |
| | LB032072 | mg/kg | 0.1 | <0.1 | 0% | 86% | 87% |
| | LB032073 | mg/kg | 0.1 | <0.1 | 0% | 94% | 114% |
| | LB032074 | mg/kg | 0.1 | <0.1 | 0% | 82% | 88% |

Polycyclic VOCs

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Naphthalene | LB032071 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032072 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032073 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| | LB032074 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Dibromofluoromethane (Surrogate) | LB032071 | % | - | 99% | 11 - 20% | 104% | 82% |
| | LB032072 | % | - | 90% | 2 - 6% | 93% | 93% |
| | LB032073 | % | - | 106% | 19 - 27% | 76% | 77% |
| | LB032074 | % | - | 109% | 5 - 9% | 92% | 94% |
| d4-1,2-dichloroethane (Surrogate) | LB032071 | % | - | 101% | 4 - 15% | 110% | 85% |
| | LB032072 | % | - | 97% | 4 - 14% | 99% | 100% |
| | LB032073 | % | - | 102% | 23% | 74% | 74% |
| | LB032074 | % | - | 107% | 1 - 7% | 96% | 102% |
| d8-toluene (Surrogate) | LB032071 | % | - | 103% | 15 - 16% | 105% | 78% |
| | LB032072 | % | - | 81% | 1 - 43% | 92% | 80% |
| | LB032073 | % | - | 111% | 22 - 30% | 79% | 71% |
| | LB032074 | % | - | 104% | 1 - 9% | 92% | 91% |
| Bromofluorobenzene (Surrogate) | LB032071 | % | - | 105% | 5% | 127% | 100% |
| | LB032072 | % | - | 93% | 8 - 17% | 94% | 116% |
| | LB032073 | % | - | 105% | 10 - 16% | 92% | 98% |
| | LB032074 | % | - | 100% | 5% | 101% | 92% |

Totals

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Total Xylenes* | LB032071 | mg/kg | 0.3 | <0.3 | 0% | NA | NA |
| | LB032072 | mg/kg | 0.3 | <0.3 | 0% | NA | NA |
| | LB032073 | mg/kg | 0.3 | <0.3 | 0% | NA | NA |
| | LB032074 | mg/kg | 0.3 | <0.3 | 0% | NA | NA |
| Total BTEX* | LB032071 | mg/kg | - | 0 | 0% | NA | NA |
| | LB032072 | mg/kg | - | 0 | 0% | NA | NA |

# QC SUMMARY

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.

**VOC's in Soil Method: ME-(AU)-[ENV]AN433/AN434 (continued)**

| | | | | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Total BTEX* | LB032073 | mg/kg | - | 0 | 0% | NA | NA |
| | LB032074 | mg/kg | - | 0 | 0% | NA | 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. |
| 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 analsysis by ASS or ICP as per USEPA Method 200.8. |
| AN088 | Orbital rolling for Organic pollutants are extracted from soil/sediment by transferring an appropriate mass of sample to a clear soil jar and extracting with 1:1 Dichloromethane/Acetone. Orbital Rolling method is intended for the extraction of semi-volatile organic compounds from soil/sediment samples, and is based somewhat on USEPA method 3570 (Micro Organic extraction and sample preparation). Method 3700. |
| AN101 | pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water (or 0.01M CaCl2) is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+. |
| AN106 | Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos/cm or µS/cm @ 25°C. For soils, an extract with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Salinity can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. Reference APHA 2520 B. |
| 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 |
| 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 Draft NEPM 2011, >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is not corrected for Naphthalene. |
| 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 Petroleum Hydrocarbons (TPH) 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, dependant 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). |
| AN433/AN434 | 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. |

# METHOD SUMMARY

| METHOD | METHODOLOGY SUMMARY |
|---|---|
| AN433/AN434/AN410 | VOCs and C6-C9/C6-C10 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

| | |
|---|---|
| IS | Insufficient sample for analysis. |
| LNR | Sample listed, but not received. |
| * | This analysis is not covered by the scope of accreditation. |
| ^ | Performed by outside laboratory. |
| LOR | Limit of Reporting |
| ↑↓ | Raised or Lowered Limit of Reporting |
| QFH | QC result is above the upper tolerance |
| QFL | QC result is below the lower tolerance |
| - | The sample was not analysed for this analyte |
| NVL | Not Validated |

Samples analysed as received.
Solid samples expressed on a dry weight basis.

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here:
http://www.sgs.com.au.pv.sgsv3/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

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# Appendix H

## ProUCL Output

| | 0 | 1 |
|---|---|---|
| | As | D_As |
| 1 | 1 | 1 |
| 2 | 1 | 1 |
| 3 | 1 | 1 |
| 4 | 2 | 1 |
| 5 | 2 | 1 |
| 6 | 2 | 1 |
| 7 | 2 | 1 |
| 8 | 2 | 1 |
| 9 | 3 | 1 |
| 10 | 3 | 1 |
| 11 | 3 | 1 |
| 12 | 3 | 1 |
| 13 | 3 | 1 |
| 14 | 4 | 1 |
| 15 | 4 | 1 |
| 16 | 6 | 1 |
| 17 | 6 | 1 |
| 18 | 6 | 1 |
| 19 | 7 | 1 |
| 20 | 11 | 1 |
| 21 | 12 | 1 |
| 22 | 16 | 1 |
| 23 | 17 | 1 |
| 24 | 24 | 1 |
| 25 | 27 | 1 |
| 26 | 29 | 1 |
| 27 | 80 | 1 |
| 28 | 100 | 1 |
| 29 | 100 | 1 |
| 30 | 290 | 1 |
| 31 | 1 | 0 |
| 32 | 1 | 0 |
| 33 | 1 | 0 |
| 34 | 1 | 0 |
| 35 | 1 | 0 |
| 36 | 1 | 0 |
| 37 | 1 | 0 |
| 38 | 1 | 0 |
| 39 | 1 | 0 |
| 40 | 1 | 0 |
| 41 | 1 | 0 |
| 42 | 1 | 0 |
| 43 | 1 | 0 |
| 44 | 3 | 0 |
| 45 | 3 | 0 |
| 46 | 3 | 0 |
| 47 | 3 | 0 |
| 48 | 3 | 0 |
| 49 | 3 | 0 |
| 50 | 3 | 0 |
| 51 | 3 | 0 |
| 52 | 3 | 0 |

| | 0 | 1 |
|---|---|---|
| | As | D_As |
| 53 | 3 | 0 |
| 54 | 3 | 0 |
| 55 | 3 | 0 |
| 56 | 3 | 0 |
| 57 | 3 | 0 |
| 58 | 3 | 0 |
| 59 | 3 | 0 |
| 60 | 3 | 0 |
| 61 | 3 | 0 |
| 62 | 3 | 0 |
| 63 | 3 | 0 |
| 64 | 3 | 0 |
| 65 | 3 | 0 |
| 66 | 3 | 0 |
| 67 | 3 | 0 |
| 68 | 3 | 0 |
| 69 | 3 | 0 |
| 70 | 3 | 0 |
| 71 | 3 | 0 |
| 72 | 3 | 0 |
| 73 | 3 | 0 |
| 74 | 3 | 0 |
| 75 | 3 | 0 |
| 76 | 3 | 0 |
| 77 | 3 | 0 |
| 78 | 3 | 0 |
| 79 | 3 | 0 |
| 80 | 3 | 0 |
| 81 | 3 | 0 |
| 82 | 3 | 0 |
| 83 | 3 | 0 |
| 84 | 3 | 0 |
| 85 | 3 | 0 |
| 86 | 3 | 0 |
| 87 | 3 | 0 |
| 88 | 3 | 0 |
| 89 | 3 | 0 |
| 90 | 3 | 0 |
| 91 | 3 | 0 |
| 92 | 3 | 0 |
| 93 | 3 | 0 |
| 94 | 3 | 0 |
| 95 | 3 | 0 |
| 96 | 3 | 0 |
| 97 | 3 | 0 |
| 98 | 3 | 0 |
| 99 | 3 | 0 |
| 100 | 3 | 0 |
| 101 | 3 | 0 |
| 102 | 3 | 0 |
| 103 | 3 | 0 |
| 104 | 3 | 0 |

| | 0 | 1 |
|---|---|---|
| | As | D_As |
| 105 | 3 | 0 |
| 106 | 3 | 0 |
| 107 | 3 | 0 |
| 108 | 3 | 0 |
| 109 | 3 | 0 |
| 110 | 3 | 0 |
| 111 | 3 | 0 |
| 112 | 3 | 0 |
| 113 | 3 | 0 |
| 114 | 3 | 0 |
| 115 | 5 | 0 |

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | UCL Statistics for Data Sets with Non-Detects | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | User Selected Options | | | | | | | | | | | |
| 4 | Date/Time of Computation | ProUCL 5.113/07/2021 1:06:47 PM | | | | | | | | | | |
| 5 | From File | WorkSheet.xls | | | | | | | | | | |
| 6 | Full Precision | OFF | | | | | | | | | | |
| 7 | Confidence Coefficient | 95% | | | | | | | | | | |
| 8 | Number of Bootstrap Operations | 2000 | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | As | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | General Statistics | | | | | | | | | | | |
| 13 | Total Number of Observations | 115 | | | | | Number of Distinct Observations | 17 | | | | |
| 14 | Number of Detects | 30 | | | | | Number of Non-Detects | 85 | | | | |
| 15 | Number of Distinct Detects | 16 | | | | | Number of Distinct Non-Detects | 3 | | | | |
| 16 | Minimum Detect | 1 | | | | | Minimum Non-Detect | 1 | | | | |
| 17 | Maximum Detect | 290 | | | | | Maximum Non-Detect | 5 | | | | |
| 18 | Variance Detects | 3245 | | | | | Percent Non-Detects | 73.91% | | | | |
| 19 | Mean Detects | 25.57 | | | | | SD Detects | 56.96 | | | | |
| 20 | Median Detects | 5 | | | | | CV Detects | 2.228 | | | | |
| 21 | Skewness Detects | 3.848 | | | | | Kurtosis Detects | 16.66 | | | | |
| 22 | Mean of Logged Detects | 1.955 | | | | | SD of Logged Detects | 1.494 | | | | |
| 23 | | | | | | | | | | | | |
| 24 | Normal GOF Test on Detects Only | | | | | | | | | | | |
| 25 | Shapiro Wilk Test Statistic | 0.471 | | | | | Shapiro Wilk GOF Test | | | | | |
| 26 | 5% Shapiro Wilk Critical Value | 0.927 | | | | | Detected Data Not Normal at 5% Significance Level | | | | | |
| 27 | Lilliefors Test Statistic | 0.343 | | | | | Lilliefors GOF Test | | | | | |
| 28 | 5% Lilliefors Critical Value | 0.159 | | | | | Detected Data Not Normal at 5% Significance Level | | | | | |
| 29 | Detected Data Not Normal at 5% Significance Level | | | | | | | | | | | |
| 30 | | | | | | | | | | | | |
| 31 | Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs | | | | | | | | | | | |
| 32 | KM Mean | 7.559 | | | | | KM Standard Error of Mean | 2.898 | | | | |
| 33 | KM SD | 30.54 | | | | | 95% KM (BCA) UCL | 12.58 | | | | |
| 34 | 95% KM (t) UCL | 12.36 | | | | | 95% KM (Percentile Bootstrap) UCL | 12.79 | | | | |
| 35 | 95% KM (z) UCL | 12.33 | | | | | 95% KM Bootstrap t UCL | 19.98 | | | | |
| 36 | 90% KM Chebyshev UCL | 16.25 | | | | | 95% KM Chebyshev UCL | 20.19 | | | | |
| 37 | 97.5% KM Chebyshev UCL | 25.65 | | | | | 99% KM Chebyshev UCL | 36.39 | | | | |
| 38 | | | | | | | | | | | | |
| 39 | Gamma GOF Tests on Detected Observations Only | | | | | | | | | | | |
| 40 | A-D Test Statistic | 2.332 | | | | | Anderson-Darling GOF Test | | | | | |
| 41 | 5% A-D Critical Value | 0.81 | | | | | Detected Data Not Gamma Distributed at 5% Significance Level | | | | | |
| 42 | K-S Test Statistic | 0.232 | | | | | Kolmogorov-Smirnov GOF | | | | | |
| 43 | 5% K-S Critical Value | 0.169 | | | | | Detected Data Not Gamma Distributed at 5% Significance Level | | | | | |
| 44 | Detected Data Not Gamma Distributed at 5% Significance Level | | | | | | | | | | | |
| 45 | | | | | | | | | | | | |
| 46 | Gamma Statistics on Detected Data Only | | | | | | | | | | | |
| 47 | k hat (MLE) | 0.495 | | | | | k star (bias corrected MLE) | 0.467 | | | | |
| 48 | Theta hat (MLE) | 51.69 | | | | | Theta star (bias corrected MLE) | 54.71 | | | | |
| 49 | nu hat (MLE) | 29.67 | | | | | nu star (bias corrected) | 28.04 | | | | |
| 50 | Mean (detects) | 25.57 | | | | | | | | | | |
| 51 | | | | | | | | | | | | |
| 52 | Gamma ROS Statistics using Imputed Non-Detects | | | | | | | | | | | |
| 53 | GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20) | | | | | | | | | | |
| 55 | For such situations, GROS method may yield incorrect values of UCLs and BTVs | | | | | | | | | | |
| 56 | This is especially true when the sample size is small. | | | | | | | | | | |
| 57 | For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates | | | | | | | | | | |
| 58 | | | | | Minimum | 0.01 | | | Mean | 6.677 | |
| 59 | | | | | Maximum | 290 | | | Median | 0.01 | |
| 60 | | | | | SD | 30.86 | | | CV | 4.622 | |
| 61 | | | | | k hat (MLE) | 0.159 | | | k star (bias corrected MLE) | 0.161 | |
| 62 | | | | | Theta hat (MLE) | 41.99 | | | Theta star (bias corrected MLE) | 41.56 | |
| 63 | | | | | nu hat (MLE) | 36.57 | | | nu star (bias corrected) | 36.95 | |
| 64 | | | | | Adjusted Level of Significance (β) | 0.0479 | | | | | |
| 65 | | | | | Approximate Chi Square Value (36.95, α) | 24.04 | | | Adjusted Chi Square Value (36.95, β) | 23.9 | |
| 66 | | | | | 95% Gamma Approximate UCL (use when n>=50) | 10.26 | | | 95% Gamma Adjusted UCL (use when n<50) | 10.32 | |
| 67 | | | | | | | | | | | |
| 68 | Estimates of Gamma Parameters using KM Estimates | | | | | | | | | | |
| 69 | | | | | Mean (KM) | 7.559 | | | SD (KM) | 30.54 | |
| 70 | | | | | Variance (KM) | 932.9 | | | SE of Mean (KM) | 2.898 | |
| 71 | | | | | k hat (KM) | 0.0613 | | | k star (KM) | 0.0655 | |
| 72 | | | | | nu hat (KM) | 14.09 | | | nu star (KM) | 15.05 | |
| 73 | | | | | theta hat (KM) | 123.4 | | | theta star (KM) | 115.5 | |
| 74 | | | | | 80% gamma percentile (KM) | 2.301 | | | 90% gamma percentile (KM) | 15.43 | |
| 75 | | | | | 95% gamma percentile (KM) | 43.07 | | | 99% gamma percentile (KM) | 146.8 | |
| 76 | | | | | | | | | | | |
| 77 | Gamma Kaplan-Meier (KM) Statistics | | | | | | | | | | |
| 78 | | | | | Approximate Chi Square Value (15.05, α) | 7.299 | | | Adjusted Chi Square Value (15.05, β) | 7.23 | |
| 79 | | | | | 95% Gamma Approximate KM-UCL (use when n>=50) | 15.59 | | | 95% Gamma Adjusted KM-UCL (use when n<50) | 15.74 | |
| 80 | | | | | | | | | | | |
| 81 | Lognormal GOF Test on Detected Observations Only | | | | | | | | | | |
| 82 | | | | | Shapiro Wilk Test Statistic | 0.918 | | | Shapiro Wilk GOF Test | | |
| 83 | | | | | 5% Shapiro Wilk Critical Value | 0.927 | | | Detected Data Not Lognormal at 5% Significance Level | | |
| 84 | | | | | Lilliefors Test Statistic | 0.15 | | | Lilliefors GOF Test | | |
| 85 | | | | | 5% Lilliefors Critical Value | 0.159 | | | Detected Data appear Lognormal at 5% Significance Level | | |
| 86 | Detected Data appear Approximate Lognormal at 5% Significance Level | | | | | | | | | | |
| 87 | | | | | | | | | | | |
| 88 | Lognormal ROS Statistics Using Imputed Non-Detects | | | | | | | | | | |
| 89 | | | | | Mean in Original Scale | 7.05 | | | Mean in Log Scale | -0.845 | |
| 90 | | | | | SD in Original Scale | 30.79 | | | SD in Log Scale | 2.392 | |
| 91 | | | | | 95% t UCL (assumes normality of ROS data) | 11.81 | | | 95% Percentile Bootstrap UCL | 12.56 | |
| 92 | | | | | 95% BCA Bootstrap UCL | 15.37 | | | 95% Bootstrap t UCL | 19.34 | |
| 93 | | | | | 95% H-UCL (Log ROS) | 17.64 | | | | | |
| 94 | | | | | | | | | | | |
| 95 | Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution | | | | | | | | | | |
| 96 | | | | | KM Mean (logged) | 0.614 | | | KM Geo Mean | 1.848 | |
| 97 | | | | | KM SD (logged) | 1.121 | | | 95% Critical H Value (KM-Log) | 2.333 | |
| 98 | | | | | KM Standard Error of Mean (logged) | 0.116 | | | 95% H-UCL (KM -Log) | 4.422 | |
| 99 | | | | | KM SD (logged) | 1.121 | | | 95% Critical H Value (KM-Log) | 2.333 | |
| 100 | | | | | KM Standard Error of Mean (logged) | 0.116 | | | | | |
| 101 | | | | | | | | | | | |
| 102 | DL/2 Statistics | | | | | | | | | | |
| 103 | DL/2 Normal | | | | | | | | DL/2 Log-Transformed | | |
| 104 | | | | | Mean in Original Scale | 7.674 | | | Mean in Log Scale | 0.69 | |
| 105 | | | | | SD in Original Scale | 30.65 | | | SD in Log Scale | 1.122 | |
| 106 | | | | | 95% t UCL (Assumes normality) | 12.41 | | | 95% H-Stat UCL | 4.779 | |

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 107 | DL/2 is not a recommended method, provided for comparisons and historical reasons | | | | | | | | | | | |
| 108 | | | | | | | | | | | | |
| 109 | Nonparametric Distribution Free UCL Statistics | | | | | | | | | | | |
| 110 | Detected Data appear Approximate Lognormal Distributed at 5% Significance Level | | | | | | | | | | | |
| 111 | | | | | | | | | | | | |
| 112 | Suggested UCL to Use | | | | | | | | | | | |
| 113 | | | | | KM H-UCL | 4.422 | | | | | | |
| 114 | | | | | | | | | | | | |
| 115 | Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. | | | | | | | | | | | |
| 116 | Recommendations are based upon data size, data distribution, and skewness. | | | | | | | | | | | |
| 117 | These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006). | | | | | | | | | | | |
| 118 | However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. | | | | | | | | | | | |
| 119 | | | | | | | | | | | | |

| | 0 | 1 |
|---|---|---|
| | Cd | D_Cd |
| 1 | 0.3 | 1 |
| 2 | 0.4 | 1 |
| 3 | 0.9 | 1 |
| 4 | 1.2 | 1 |
| 5 | 3.2 | 1 |
| 6 | 3.4 | 1 |
| 7 | 0.3 | 0 |
| 8 | 0.3 | 0 |
| 9 | 0.3 | 0 |
| 10 | 0.3 | 0 |
| 11 | 0.3 | 0 |
| 12 | 0.3 | 0 |
| 13 | 0.3 | 0 |
| 14 | 0.3 | 0 |
| 15 | 0.3 | 0 |
| 16 | 0.3 | 0 |
| 17 | 0.3 | 0 |
| 18 | 0.3 | 0 |
| 19 | 0.3 | 0 |
| 20 | 0.3 | 0 |
| 21 | 0.3 | 0 |
| 22 | 0.3 | 0 |
| 23 | 0.3 | 0 |
| 24 | 0.3 | 0 |
| 25 | 0.3 | 0 |
| 26 | 0.3 | 0 |
| 27 | 0.3 | 0 |
| 28 | 0.3 | 0 |
| 29 | 0.3 | 0 |
| 30 | 0.3 | 0 |
| 31 | 0.3 | 0 |
| 32 | 0.3 | 0 |
| 33 | 0.3 | 0 |
| 34 | 0.3 | 0 |
| 35 | 0.3 | 0 |
| 36 | 0.3 | 0 |
| 37 | 0.3 | 0 |
| 38 | 0.3 | 0 |
| 39 | 0.3 | 0 |
| 40 | 0.3 | 0 |
| 41 | 0.3 | 0 |
| 42 | 0.3 | 0 |
| 43 | 0.3 | 0 |
| 44 | 0.3 | 0 |
| 45 | 0.3 | 0 |
| 46 | 0.3 | 0 |
| 47 | 0.3 | 0 |
| 48 | 0.3 | 0 |
| 49 | 0.3 | 0 |
| 50 | 0.3 | 0 |
| 51 | 0.3 | 0 |
| 52 | 0.3 | 0 |

| | 0 | 1 |
|---|---|---|
| | Cd | D_Cd |
| 53 | 0.3 | 0 |
| 54 | 0.3 | 0 |
| 55 | 0.3 | 0 |
| 56 | 0.3 | 0 |
| 57 | 0.3 | 0 |
| 58 | 0.3 | 0 |
| 59 | 0.3 | 0 |
| 60 | 0.3 | 0 |
| 61 | 0.3 | 0 |
| 62 | 0.3 | 0 |
| 63 | 0.3 | 0 |
| 64 | 0.3 | 0 |
| 65 | 0.3 | 0 |
| 66 | 0.3 | 0 |
| 67 | 0.3 | 0 |
| 68 | 0.3 | 0 |
| 69 | 0.3 | 0 |
| 70 | 0.3 | 0 |
| 71 | 0.3 | 0 |
| 72 | 0.3 | 0 |
| 73 | 0.3 | 0 |
| 74 | 0.3 | 0 |
| 75 | 0.3 | 0 |
| 76 | 0.3 | 0 |
| 77 | 0.3 | 0 |
| 78 | 0.3 | 0 |
| 79 | 0.3 | 0 |
| 80 | 0.3 | 0 |
| 81 | 0.3 | 0 |
| 82 | 0.3 | 0 |
| 83 | 0.3 | 0 |
| 84 | 0.3 | 0 |
| 85 | 0.3 | 0 |
| 86 | 0.3 | 0 |
| 87 | 0.3 | 0 |
| 88 | 0.3 | 0 |
| 89 | 0.3 | 0 |
| 90 | 0.3 | 0 |
| 91 | 0.3 | 0 |
| 92 | 0.3 | 0 |
| 93 | 0.3 | 0 |
| 94 | 0.3 | 0 |
| 95 | 0.3 | 0 |
| 96 | 0.3 | 0 |
| 97 | 0.3 | 0 |
| 98 | 0.3 | 0 |
| 99 | 0.3 | 0 |
| 100 | 0.3 | 0 |
| 101 | 0.3 | 0 |
| 102 | 0.3 | 0 |
| 103 | 0.3 | 0 |
| 104 | 0.3 | 0 |

| | 0 | 1 |
|---|---|---|
| | Cd | D_Cd |
| 105 | 0.3 | 0 |
| 106 | 0.3 | 0 |
| 107 | 0.3 | 0 |
| 108 | 0.3 | 0 |
| 109 | 0.3 | 0 |
| 110 | 0.3 | 0 |
| 111 | 0.3 | 0 |
| 112 | 0.3 | 0 |
| 113 | 0.3 | 0 |
| 114 | 0.3 | 0 |
| 115 | 0.3 | 0 |
| 116 | 1.0 | 0 |

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | UCL Statistics for Data Sets with Non-Detects | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | User Selected Options | | | | | | | | | | | |
| 4 | Date/Time of Computation | ProUCL 5.113/07/2021 1:13:11 PM | | | | | | | | | | |
| 5 | From File | WorkSheet.xls | | | | | | | | | | |
| 6 | Full Precision | OFF | | | | | | | | | | |
| 7 | Confidence Coefficient | 95% | | | | | | | | | | |
| 8 | Number of Bootstrap Operations | 2000 | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | Cd | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | General Statistics | | | | | | | | | | | |
| 13 | Total Number of Observations | 116 | | | | | Number of Distinct Observations | 7 | | | | |
| 14 | Number of Detects | 6 | | | | | Number of Non-Detects | 110 | | | | |
| 15 | Number of Distinct Detects | 6 | | | | | Number of Distinct Non-Detects | 2 | | | | |
| 16 | Minimum Detect | 0.3 | | | | | Minimum Non-Detect | 0.3 | | | | |
| 17 | Maximum Detect | 3.4 | | | | | Maximum Non-Detect | 1 | | | | |
| 18 | Variance Detects | 1.915 | | | | | Percent Non-Detects | 94.83% | | | | |
| 19 | Mean Detects | 1.567 | | | | | SD Detects | 1.384 | | | | |
| 20 | Median Detects | 1.05 | | | | | CV Detects | 0.883 | | | | |
| 21 | Skewness Detects | 0.742 | | | | | Kurtosis Detects | -1.847 | | | | |
| 22 | Mean of Logged Detects | 0.0573 | | | | | SD of Logged Detects | 1.016 | | | | |
| 23 | | | | | | | | | | | | |
| 24 | Normal GOF Test on Detects Only | | | | | | | | | | | |
| 25 | Shapiro Wilk Test Statistic | 0.822 | | | | | Shapiro Wilk GOF Test | | | | | |
| 26 | 5% Shapiro Wilk Critical Value | 0.788 | | | | | Detected Data appear Normal at 5% Significance Level | | | | | |
| 27 | Lilliefors Test Statistic | 0.271 | | | | | Lilliefors GOF Test | | | | | |
| 28 | 5% Lilliefors Critical Value | 0.325 | | | | | Detected Data appear Normal at 5% Significance Level | | | | | |
| 29 | Detected Data appear Normal at 5% Significance Level | | | | | | | | | | | |
| 30 | | | | | | | | | | | | |
| 31 | Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs | | | | | | | | | | | |
| 32 | KM Mean | 0.366 | | | | | KM Standard Error of Mean | 0.0408 | | | | |
| 33 | KM SD | 0.402 | | | | | 95% KM (BCA) UCL | 0.431 | | | | |
| 34 | 95% KM (t) UCL | 0.433 | | | | | 95% KM (Percentile Bootstrap) UCL | 0.43 | | | | |
| 35 | 95% KM (z) UCL | 0.433 | | | | | 95% KM Bootstrap t UCL | 0.525 | | | | |
| 36 | 90% KM Chebyshev UCL | 0.488 | | | | | 95% KM Chebyshev UCL | 0.544 | | | | |
| 37 | 97.5% KM Chebyshev UCL | 0.621 | | | | | 99% KM Chebyshev UCL | 0.772 | | | | |
| 38 | | | | | | | | | | | | |
| 39 | Gamma GOF Tests on Detected Observations Only | | | | | | | | | | | |
| 40 | A-D Test Statistic | 0.379 | | | | | Anderson-Darling GOF Test | | | | | |
| 41 | 5% A-D Critical Value | 0.709 | | | | | Detected data appear Gamma Distributed at 5% Significance Level | | | | | |
| 42 | K-S Test Statistic | 0.224 | | | | | Kolmogorov-Smirnov GOF | | | | | |
| 43 | 5% K-S Critical Value | 0.338 | | | | | Detected data appear Gamma Distributed at 5% Significance Level | | | | | |
| 44 | Detected data appear Gamma Distributed at 5% Significance Level | | | | | | | | | | | |
| 45 | | | | | | | | | | | | |
| 46 | Gamma Statistics on Detected Data Only | | | | | | | | | | | |
| 47 | k hat (MLE) | 1.42 | | | | | k star (bias corrected MLE) | 0.821 | | | | |
| 48 | Theta hat (MLE) | 1.103 | | | | | Theta star (bias corrected MLE) | 1.908 | | | | |
| 49 | nu hat (MLE) | 17.04 | | | | | nu star (bias corrected) | 9.854 | | | | |
| 50 | Mean (detects) | 1.567 | | | | | | | | | | |
| 51 | | | | | | | | | | | | |
| 52 | Gamma ROS Statistics using Imputed Non-Detects | | | | | | | | | | | |
| 53 | GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20) | | | | | | | | | | |
| 55 | For such situations, GROS method may yield incorrect values of UCLs and BTVs | | | | | | | | | | |
| 56 | This is especially true when the sample size is small. | | | | | | | | | | |
| 57 | For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates | | | | | | | | | | |
| 58 | | | | | Minimum | 0.01 | | | Mean | 0.0905 | |
| 59 | | | | | Maximum | 3.4 | | | Median | 0.01 | |
| 60 | | | | | SD | 0.451 | | | CV | 4.979 | |
| 61 | | | | | k hat (MLE) | 0.344 | | | k star (bias corrected MLE) | 0.341 | |
| 62 | | | | | Theta hat (MLE) | 0.263 | | | Theta star (bias corrected MLE) | 0.266 | |
| 63 | | | | | nu hat (MLE) | 79.75 | | | nu star (bias corrected) | 79.03 | |
| 64 | | | | | Adjusted Level of Significance (β) | 0.0479 | | | | | |
| 65 | | | | | Approximate Chi Square Value (79.03, α) | 59.54 | | | Adjusted Chi Square Value (79.03, β) | 59.33 | |
| 66 | | | | | 95% Gamma Approximate UCL (use when n>=50) | 0.12 | | | 95% Gamma Adjusted UCL (use when n<50) | 0.121 | |
| 67 | | | | | | | | | | | |
| 68 | Estimates of Gamma Parameters using KM Estimates | | | | | | | | | | |
| 69 | | | | | Mean (KM) | 0.366 | | | SD (KM) | 0.402 | |
| 70 | | | | | Variance (KM) | 0.161 | | | SE of Mean (KM) | 0.0408 | |
| 71 | | | | | k hat (KM) | 0.829 | | | k star (KM) | 0.813 | |
| 72 | | | | | nu hat (KM) | 192.3 | | | nu star (KM) | 188.6 | |
| 73 | | | | | theta hat (KM) | 0.441 | | | theta star (KM) | 0.45 | |
| 74 | | | | | 80% gamma percentile (KM) | 0.597 | | | 90% gamma percentile (KM) | 0.885 | |
| 75 | | | | | 95% gamma percentile (KM) | 1.179 | | | 99% gamma percentile (KM) | 1.871 | |
| 76 | | | | | | | | | | | |
| 77 | Gamma Kaplan-Meier (KM) Statistics | | | | | | | | | | |
| 78 | | | | | Approximate Chi Square Value (188.64, α) | 157.9 | | | Adjusted Chi Square Value (188.64, β) | 157.5 | |
| 79 | | | | | 95% Gamma Approximate KM-UCL (use when n>=50) | 0.437 | | | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.438 | |
| 80 | | | | | | | | | | | |
| 81 | Lognormal GOF Test on Detected Observations Only | | | | | | | | | | |
| 82 | | | | | Shapiro Wilk Test Statistic | 0.912 | | | Shapiro Wilk GOF Test | | |
| 83 | | | | | 5% Shapiro Wilk Critical Value | 0.788 | | | Detected Data appear Lognormal at 5% Significance Level | | |
| 84 | | | | | Lilliefors Test Statistic | 0.195 | | | Lilliefors GOF Test | | |
| 85 | | | | | 5% Lilliefors Critical Value | 0.325 | | | Detected Data appear Lognormal at 5% Significance Level | | |
| 86 | Detected Data appear Lognormal at 5% Significance Level | | | | | | | | | | |
| 87 | | | | | | | | | | | |
| 88 | Lognormal ROS Statistics Using Imputed Non-Detects | | | | | | | | | | |
| 89 | | | | | Mean in Original Scale | 0.0966 | | | Mean in Log Scale | -6.291 | |
| 90 | | | | | SD in Original Scale | 0.451 | | | SD in Log Scale | 3.074 | |
| 91 | | | | | 95% t UCL (assumes normality of ROS data) | 0.166 | | | 95% Percentile Bootstrap UCL | 0.17 | |
| 92 | | | | | 95% BCA Bootstrap UCL | 0.202 | | | 95% Bootstrap t UCL | 0.317 | |
| 93 | | | | | 95% H-UCL (Log ROS) | 0.81 | | | | | |
| 94 | | | | | | | | | | | |
| 95 | Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution | | | | | | | | | | |
| 96 | | | | | KM Mean (logged) | -1.139 | | | KM Geo Mean | 0.32 | |
| 97 | | | | | KM SD (logged) | 0.35 | | | 95% Critical H Value (KM-Log) | 1.759 | |
| 98 | | | | | KM Standard Error of Mean (logged) | 0.0356 | | | 95% H-UCL (KM -Log) | 0.361 | |
| 99 | | | | | KM SD (logged) | 0.35 | | | 95% Critical H Value (KM-Log) | 1.759 | |
| 100 | | | | | KM Standard Error of Mean (logged) | 0.0356 | | | | | |
| 101 | | | | | | | | | | | |
| 102 | DL/2 Statistics | | | | | | | | | | |
| 103 | DL/2 Normal | | | | | | | | DL/2 Log-Transformed | | |
| 104 | | | | | Mean in Original Scale | 0.226 | | | Mean in Log Scale | -1.786 | |
| 105 | | | | | SD in Original Scale | 0.428 | | | SD in Log Scale | 0.494 | |
| 106 | | | | | 95% t UCL (Assumes normality) | 0.292 | | | 95% H-Stat UCL | 0.206 | |

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 107 | DL/2 is not a recommended method, provided for comparisons and historical reasons | | | | | | | | | | | |
| 108 | | | | | | | | | | | | |
| 109 | Nonparametric Distribution Free UCL Statistics | | | | | | | | | | | |
| 110 | Detected Data appear Normal Distributed at 5% Significance Level | | | | | | | | | | | |
| 111 | | | | | | | | | | | | |
| 112 | Suggested UCL to Use | | | | | | | | | | | |
| 113 | 95% KM (t) UCL | | | | | 0.433 | | | | | | |
| 114 | | | | | | | | | | | | |
| 115 | Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. | | | | | | | | | | | |
| 116 | Recommendations are based upon data size, data distribution, and skewness. | | | | | | | | | | | |
| 117 | These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006). | | | | | | | | | | | |
| 118 | However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. | | | | | | | | | | | |
| 119 | | | | | | | | | | | | |

| | 0 | 1 |
|---|---|---|
| | Cu | D_Cu |
| 1 | 0.5 | 1 |
| 2 | 0.5 | 1 |
| 3 | 0.6 | 1 |
| 4 | 0.8 | 1 |
| 5 | 0.9 | 1 |
| 6 | 0.9 | 1 |
| 7 | 1 | 1 |
| 8 | 1 | 1 |
| 9 | 1 | 1 |
| 10 | 1.1 | 1 |
| 11 | 1.1 | 1 |
| 12 | 1.2 | 1 |
| 13 | 1.2 | 1 |
| 14 | 1.3 | 1 |
| 15 | 1.3 | 1 |
| 16 | 1.3 | 1 |
| 17 | 1.4 | 1 |
| 18 | 1.5 | 1 |
| 19 | 1.8 | 1 |
| 20 | 2 | 1 |
| 21 | 2.1 | 1 |
| 22 | 2.4 | 1 |
| 23 | 2.6 | 1 |
| 24 | 2.8 | 1 |
| 25 | 3.4 | 1 |
| 26 | 3.5 | 1 |
| 27 | 3.7 | 1 |
| 28 | 4 | 1 |
| 29 | 4.2 | 1 |
| 30 | 5.9 | 1 |
| 31 | 6.8 | 1 |
| 32 | 8 | 1 |
| 33 | 9.5 | 1 |
| 34 | 9.7 | 1 |
| 35 | 11 | 1 |
| 36 | 11 | 1 |
| 37 | 11 | 1 |
| 38 | 13 | 1 |
| 39 | 14 | 1 |
| 40 | 18 | 1 |
| 41 | 21 | 1 |
| 42 | 22 | 1 |
| 43 | 25 | 1 |
| 44 | 25 | 1 |
| 45 | 31 | 1 |
| 46 | 37 | 1 |
| 47 | 40 | 1 |
| 48 | 41 | 1 |
| 49 | 53 | 1 |
| 50 | 55 | 1 |
| 51 | 56 | 1 |
| 52 | 62 | 1 |

| | 0 | 1 |
|---|---|---|
| | Cu | D_Cu |
| 53 | 65 | 1 |
| 54 | 66 | 1 |
| 55 | 66 | 1 |
| 56 | 67 | 1 |
| 57 | 71 | 1 |
| 58 | 170 | 1 |
| 59 | 1 | 0 |
| 60 | 1 | 0 |
| 61 | 1 | 0 |
| 62 | 1 | 0 |
| 63 | 1 | 0 |
| 64 | 0.5 | 0 |
| 65 | 0.5 | 0 |
| 66 | 0.5 | 0 |
| 67 | 0.5 | 0 |
| 68 | 0.5 | 0 |
| 69 | 0.5 | 0 |
| 70 | 0.5 | 0 |
| 71 | 0.5 | 0 |
| 72 | 0.5 | 0 |
| 73 | 0.5 | 0 |
| 74 | 0.5 | 0 |
| 75 | 0.5 | 0 |
| 76 | 0.5 | 0 |
| 77 | 0.5 | 0 |
| 78 | 0.5 | 0 |
| 79 | 0.5 | 0 |
| 80 | 0.5 | 0 |
| 81 | 0.5 | 0 |
| 82 | 0.5 | 0 |
| 83 | 0.5 | 0 |
| 84 | 0.5 | 0 |
| 85 | 0.5 | 0 |
| 86 | 0.5 | 0 |
| 87 | 0.5 | 0 |
| 88 | 0.5 | 0 |
| 89 | 0.5 | 0 |
| 90 | 0.5 | 0 |
| 91 | 0.5 | 0 |
| 92 | 0.5 | 0 |
| 93 | 0.5 | 0 |
| 94 | 0.5 | 0 |
| 95 | 0.5 | 0 |
| 96 | 0.5 | 0 |
| 97 | 0.5 | 0 |
| 98 | 0.5 | 0 |
| 99 | 0.5 | 0 |
| 100 | 0.5 | 0 |
| 101 | 0.5 | 0 |
| 102 | 0.5 | 0 |
| 103 | 0.5 | 0 |
| 104 | 0.5 | 0 |

| | 0 | 1 |
|---|---|---|
| | Cu | D_Cu |
| 105 | 0.5 | 0 |
| 106 | 0.5 | 0 |
| 107 | 0.5 | 0 |
| 108 | 0.5 | 0 |
| 109 | 0.5 | 0 |
| 110 | 0.5 | 0 |
| 111 | 0.5 | 0 |
| 112 | 0.5 | 0 |
| 113 | 0.5 | 0 |
| 114 | 0.5 | 0 |
| 115 | 0.5 | 0 |
| 116 | 0.5 | 0 |
| 117 | 0.5 | 0 |
| 118 | 0.5 | 0 |

## UCL Statistics for Data Sets with Non-Detects

| User Selected Options | |
|---|---|
| Date/Time of Computation | ProUCL 5.113/07/2021 1:22:48 PM |
| From File | WorkSheet.xls |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

Cu

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 118 | Number of Distinct Observations | 46 |
| Number of Detects | 58 | Number of Non-Detects | 60 |
| Number of Distinct Detects | 46 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.5 | Minimum Non-Detect | 0.5 |
| Maximum Detect | 170 | Maximum Non-Detect | 0.5 |
| Variance Detects | 894.5 | Percent Non-Detects | 50.85% |
| Mean Detects | 19.69 | SD Detects | 29.91 |
| Median Detects | 5.05 | CV Detects | 1.519 |
| Skewness Detects | 2.702 | Kurtosis Detects | 10.17 |
| Mean of Logged Detects | 1.83 | SD of Logged Detects | 1.636 |

### Normal GOF Test on Detects Only

| | | |
|---|---|---|
| Shapiro Wilk Test Statistic | 0.673 | Normal GOF Test on Detected Observations Only |
| 5% Shapiro Wilk P Value | 2.220E-16 | Detected Data Not Normal at 5% Significance Level |
| Lilliefors Test Statistic | 0.261 | Lilliefors GOF Test |
| 5% Lilliefors Critical Value | 0.116 | Detected Data Not Normal at 5% Significance Level |

Detected Data Not Normal at 5% Significance Level

### Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

| | | | |
|---|---|---|---|
| KM Mean | 9.932 | KM Standard Error of Mean | 2.126 |
| KM SD | 22.89 | 95% KM (BCA) UCL | 13.84 |
| 95% KM (t) UCL | 13.46 | 95% KM (Percentile Bootstrap) UCL | 13.4 |
| 95% KM (z) UCL | 13.43 | 95% KM Bootstrap t UCL | 14.76 |
| 90% KM Chebyshev UCL | 16.31 | 95% KM Chebyshev UCL | 19.2 |
| 97.5% KM Chebyshev UCL | 23.21 | 99% KM Chebyshev UCL | 31.09 |

### Gamma GOF Tests on Detected Observations Only

| | | |
|---|---|---|
| A-D Test Statistic | 2.096 | Anderson-Darling GOF Test |
| 5% A-D Critical Value | 0.811 | Detected Data Not Gamma Distributed at 5% Significance Level |
| K-S Test Statistic | 0.165 | Kolmogorov-Smirnov GOF |
| 5% K-S Critical Value | 0.123 | Detected Data Not Gamma Distributed at 5% Significance Level |

Detected Data Not Gamma Distributed at 5% Significance Level

### Gamma Statistics on Detected Data Only

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.545 | k star (bias corrected MLE) | 0.528 |
| Theta hat (MLE) | 36.13 | Theta star (bias corrected MLE) | 37.27 |
| nu hat (MLE) | 63.22 | nu star (bias corrected) | 61.28 |
| Mean (detects) | 19.69 | | |

### Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20) | | | | | | | | | | |
| 55 | For such situations, GROS method may yield incorrect values of UCLs and BTVs | | | | | | | | | | |
| 56 | This is especially true when the sample size is small. | | | | | | | | | | |
| 57 | For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates | | | | | | | | | | |
| 58 | | | | | Minimum | 0.01 | | | Mean | 9.683 | |
| 59 | | | | | Maximum | 170 | | | Median | 0.01 | |
| 60 | | | | | SD | 23.1 | | | CV | 2.385 | |
| 61 | | | | | k hat (MLE) | 0.198 | | | k star (bias corrected MLE) | 0.199 | |
| 62 | | | | | Theta hat (MLE) | 48.79 | | | Theta star (bias corrected MLE) | 48.64 | |
| 63 | | | | | nu hat (MLE) | 46.84 | | | nu star (bias corrected) | 46.98 | |
| 64 | | | | | Adjusted Level of Significance (β) | 0.048 | | | | | |
| 65 | | | | | Approximate Chi Square Value (46.98, α) | 32.25 | | | Adjusted Chi Square Value (46.98, β) | 32.1 | |
| 66 | | | | | 95% Gamma Approximate UCL (use when n>=50) | 14.11 | | | 95% Gamma Adjusted UCL (use when n<50) | 14.17 | |
| 67 | | | | | | | | | | | |
| 68 | Estimates of Gamma Parameters using KM Estimates | | | | | | | | | | |
| 69 | | | | | Mean (KM) | 9.932 | | | SD (KM) | 22.89 | |
| 70 | | | | | Variance (KM) | 524.1 | | | SE of Mean (KM) | 2.126 | |
| 71 | | | | | k hat (KM) | 0.188 | | | k star (KM) | 0.189 | |
| 72 | | | | | nu hat (KM) | 44.42 | | | nu star (KM) | 44.62 | |
| 73 | | | | | theta hat (KM) | 52.77 | | | theta star (KM) | 52.53 | |
| 74 | | | | | 80% gamma percentile (KM) | 12.69 | | | 90% gamma percentile (KM) | 30.01 | |
| 75 | | | | | 95% gamma percentile (KM) | 51.91 | | | 99% gamma percentile (KM) | 112.8 | |
| 76 | | | | | | | | | | | |
| 77 | Gamma Kaplan-Meier (KM) Statistics | | | | | | | | | | |
| 78 | | | | | Approximate Chi Square Value (44.62, α) | 30.3 | | | Adjusted Chi Square Value (44.62, β) | 30.16 | |
| 79 | | | | | 95% Gamma Approximate KM-UCL (use when n>=50) | 14.63 | | | 95% Gamma Adjusted KM-UCL (use when n<50) | 14.7 | |
| 80 | | | | | | | | | | | |
| 81 | Lognormal GOF Test on Detected Observations Only | | | | | | | | | | |
| 82 | | | | | Shapiro Wilk Approximate Test Statistic | 0.918 | | | Shapiro Wilk GOF Test | | |
| 83 | | | | | 5% Shapiro Wilk P Value | 6.2190E-4 | | | Detected Data Not Lognormal at 5% Significance Level | | |
| 84 | | | | | Lilliefors Test Statistic | 0.118 | | | Lilliefors GOF Test | | |
| 85 | | | | | 5% Lilliefors Critical Value | 0.116 | | | Detected Data Not Lognormal at 5% Significance Level | | |
| 86 | Detected Data Not Lognormal at 5% Significance Level | | | | | | | | | | |
| 87 | | | | | | | | | | | |
| 88 | Lognormal ROS Statistics Using Imputed Non-Detects | | | | | | | | | | |
| 89 | | | | | Mean in Original Scale | 9.769 | | | Mean in Log Scale | -0.398 | |
| 90 | | | | | SD in Original Scale | 23.06 | | | SD in Log Scale | 2.729 | |
| 91 | | | | | 95% t UCL (assumes normality of ROS data) | 13.29 | | | 95% Percentile Bootstrap UCL | 13.43 | |
| 92 | | | | | 95% BCA Bootstrap UCL | 14.7 | | | 95% Bootstrap t UCL | 14.27 | |
| 93 | | | | | 95% H-UCL (Log ROS) | 81.72 | | | | | |
| 94 | | | | | | | | | | | |
| 95 | Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution | | | | | | | | | | |
| 96 | | | | | KM Mean (logged) | 0.547 | | | KM Geo Mean | 1.728 | |
| 97 | | | | | KM SD (logged) | 1.698 | | | 95% Critical H Value (KM-Log) | 2.969 | |
| 98 | | | | | KM Standard Error of Mean (logged) | 0.158 | | | 95% H-UCL (KM -Log) | 11.65 | |
| 99 | | | | | KM SD (logged) | 1.698 | | | 95% Critical H Value (KM-Log) | 2.969 | |
| 100 | | | | | KM Standard Error of Mean (logged) | 0.158 | | | | | |
| 101 | | | | | | | | | | | |
| 102 | DL/2 Statistics | | | | | | | | | | |
| 103 | | | | | DL/2 Normal | | | | DL/2 Log-Transformed | | |
| 104 | | | | | Mean in Original Scale | 9.805 | | | Mean in Log Scale | 0.195 | |
| 105 | | | | | SD in Original Scale | 23.04 | | | SD in Log Scale | 1.978 | |
| 106 | | | | | 95% t UCL (Assumes normality) | 13.32 | | | 95% H-Stat UCL | 15.72 | |

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 107 | DL/2 is not a recommended method, provided for comparisons and historical reasons | | | | | | | | | | | |
| 108 | | | | | | | | | | | | |
| 109 | Nonparametric Distribution Free UCL Statistics | | | | | | | | | | | |
| 110 | Data do not follow a Discernible Distribution at 5% Significance Level | | | | | | | | | | | |
| 111 | | | | | | | | | | | | |
| 112 | Suggested UCL to Use | | | | | | | | | | | |
| 113 | 95% KM (Chebyshev) UCL | | | | | 19.2 | | | | | | |
| 114 | | | | | | | | | | | | |
| 115 | Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. | | | | | | | | | | | |
| 116 | Recommendations are based upon data size, data distribution, and skewness. | | | | | | | | | | | |
| 117 | These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006). | | | | | | | | | | | |
| 118 | However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. | | | | | | | | | | | |
| 119 | | | | | | | | | | | | |

| | 0 | 1 |
|---|---|---|
| | Pb | D_Pb |
| 1 | 1 | 1 |
| 2 | 1 | 1 |
| 3 | 1 | 1 |
| 4 | 1 | 1 |
| 5 | 1 | 1 |
| 6 | 1 | 1 |
| 7 | 1 | 1 |
| 8 | 1 | 1 |
| 9 | 1 | 1 |
| 10 | 1 | 1 |
| 11 | 2 | 1 |
| 12 | 2 | 1 |
| 13 | 2 | 1 |
| 14 | 2 | 1 |
| 15 | 2 | 1 |
| 16 | 2 | 1 |
| 17 | 2 | 1 |
| 18 | 2 | 1 |
| 19 | 2 | 1 |
| 20 | 2 | 1 |
| 21 | 3 | 1 |
| 22 | 3 | 1 |
| 23 | 3 | 1 |
| 24 | 3 | 1 |
| 25 | 4 | 1 |
| 26 | 4 | 1 |
| 27 | 4 | 1 |
| 28 | 4 | 1 |
| 29 | 5 | 1 |
| 30 | 5 | 1 |
| 31 | 6 | 1 |
| 32 | 6 | 1 |
| 33 | 6 | 1 |
| 34 | 6 | 1 |
| 35 | 6 | 1 |
| 36 | 7 | 1 |
| 37 | 8 | 1 |
| 38 | 9 | 1 |
| 39 | 11 | 1 |
| 40 | 12 | 1 |
| 41 | 12 | 1 |
| 42 | 17 | 1 |
| 43 | 18 | 1 |
| 44 | 25 | 1 |
| 45 | 27 | 1 |
| 46 | 33 | 1 |
| 47 | 33 | 1 |
| 48 | 33 | 1 |
| 49 | 34 | 1 |
| 50 | 36 | 1 |
| 51 | 46 | 1 |
| 52 | 52 | 1 |

| | 0 | 1 |
|---|---|---|
| | Pb | D_Pb |
| 53 | 60 | 1 |
| 54 | 62 | 1 |
| 55 | 66 | 1 |
| 56 | 68 | 1 |
| 57 | 70 | 1 |
| 58 | 71 | 1 |
| 59 | 75 | 1 |
| 60 | 76 | 1 |
| 61 | 83 | 1 |
| 62 | 83 | 1 |
| 63 | 120 | 1 |
| 64 | 120 | 1 |
| 65 | 840 | 1 |
| 66 | 940 | 1 |
| 67 | 1100 | 1 |
| 68 | 1100 | 1 |
| 69 | 1 | 0 |
| 70 | 1 | 0 |
| 71 | 1 | 0 |
| 72 | 1 | 0 |
| 73 | 1 | 0 |
| 74 | 1 | 0 |
| 75 | 1 | 0 |
| 76 | 1 | 0 |
| 77 | 1 | 0 |
| 78 | 1 | 0 |
| 79 | 1 | 0 |
| 80 | 1 | 0 |
| 81 | 1 | 0 |
| 82 | 1 | 0 |
| 83 | 1 | 0 |
| 84 | 1 | 0 |
| 85 | 1 | 0 |
| 86 | 1 | 0 |
| 87 | 1 | 0 |
| 88 | 1 | 0 |
| 89 | 1 | 0 |
| 90 | 1 | 0 |
| 91 | 1 | 0 |
| 92 | 1 | 0 |
| 93 | 1 | 0 |
| 94 | 1 | 0 |
| 95 | 1 | 0 |
| 96 | 1 | 0 |
| 97 | 1 | 0 |
| 98 | 1 | 0 |
| 99 | 1 | 0 |
| 100 | 1 | 0 |
| 101 | 1 | 0 |
| 102 | 1 | 0 |
| 103 | 1 | 0 |
| 104 | 1 | 0 |

| | 0 | 1 |
|---|---|---|
| | Pb | D_Pb |
| 105 | 1 | 0 |
| 106 | 1 | 0 |
| 107 | 1 | 0 |
| 108 | 1 | 0 |
| 109 | 1 | 0 |
| 110 | 1 | 0 |
| 111 | 1 | 0 |
| 112 | 1 | 0 |
| 113 | 1 | 0 |
| 114 | 1 | 0 |
| 115 | 1 | 0 |
| 116 | 1 | 0 |
| 117 | 1 | 0 |
| 118 | 1 | 0 |

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | UCL Statistics for Data Sets with Non-Detects | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | User Selected Options | | | | | | | | | | | |
| 4 | Date/Time of Computation | ProUCL 5.113/07/2021 1:26:14 PM | | | | | | | | | | |
| 5 | From File | WorkSheet.xls | | | | | | | | | | |
| 6 | Full Precision | OFF | | | | | | | | | | |
| 7 | Confidence Coefficient | 95% | | | | | | | | | | |
| 8 | Number of Bootstrap Operations | 2000 | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | Pb | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | General Statistics | | | | | | | | | | | |
| 13 | Total Number of Observations | 118 | | | | | Number of Distinct Observations | 33 | | | | |
| 14 | Number of Detects | 68 | | | | | Number of Non-Detects | 50 | | | | |
| 15 | Number of Distinct Detects | 33 | | | | | Number of Distinct Non-Detects | 1 | | | | |
| 16 | Minimum Detect | 1 | | | | | Minimum Non-Detect | 1 | | | | |
| 17 | Maximum Detect | 1100 | | | | | Maximum Non-Detect | 1 | | | | |
| 18 | Variance Detects | 54732 | | | | | Percent Non-Detects | 42.37% | | | | |
| 19 | Mean Detects | 80.07 | | | | | SD Detects | 233.9 | | | | |
| 20 | Median Detects | 6 | | | | | CV Detects | 2.922 | | | | |
| 21 | Skewness Detects | 3.816 | | | | | Kurtosis Detects | 13.46 | | | | |
| 22 | Mean of Logged Detects | 2.354 | | | | | SD of Logged Detects | 1.895 | | | | |
| 23 | | | | | | | | | | | | |
| 24 | Normal GOF Test on Detects Only | | | | | | | | | | | |
| 25 | Shapiro Wilk Test Statistic | 0.357 | | | | | Normal GOF Test on Detected Observations Only | | | | | |
| 26 | 5% Shapiro Wilk P Value | 0 | | | | | Detected Data Not Normal at 5% Significance Level | | | | | |
| 27 | Lilliefors Test Statistic | 0.407 | | | | | Lilliefors GOF Test | | | | | |
| 28 | 5% Lilliefors Critical Value | 0.107 | | | | | Detected Data Not Normal at 5% Significance Level | | | | | |
| 29 | Detected Data Not Normal at 5% Significance Level | | | | | | | | | | | |
| 30 | | | | | | | | | | | | |
| 31 | Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs | | | | | | | | | | | |
| 32 | KM Mean | 46.57 | | | | | KM Standard Error of Mean | 16.75 | | | | |
| 33 | KM SD | 180.6 | | | | | 95% KM (BCA) UCL | 75.83 | | | | |
| 34 | 95% KM (t) UCL | 74.33 | | | | | 95% KM (Percentile Bootstrap) UCL | 75.9 | | | | |
| 35 | 95% KM (z) UCL | 74.11 | | | | | 95% KM Bootstrap t UCL | 97.5 | | | | |
| 36 | 90% KM Chebyshev UCL | 96.81 | | | | | 95% KM Chebyshev UCL | 119.6 | | | | |
| 37 | 97.5% KM Chebyshev UCL | 151.1 | | | | | 99% KM Chebyshev UCL | 213.2 | | | | |
| 38 | | | | | | | | | | | | |
| 39 | Gamma GOF Tests on Detected Observations Only | | | | | | | | | | | |
| 40 | A-D Test Statistic | 5.763 | | | | | Anderson-Darling GOF Test | | | | | |
| 41 | 5% A-D Critical Value | 0.857 | | | | | Detected Data Not Gamma Distributed at 5% Significance Level | | | | | |
| 42 | K-S Test Statistic | 0.196 | | | | | Kolmogorov-Smirnov GOF | | | | | |
| 43 | 5% K-S Critical Value | 0.117 | | | | | Detected Data Not Gamma Distributed at 5% Significance Level | | | | | |
| 44 | Detected Data Not Gamma Distributed at 5% Significance Level | | | | | | | | | | | |
| 45 | | | | | | | | | | | | |
| 46 | Gamma Statistics on Detected Data Only | | | | | | | | | | | |
| 47 | k hat (MLE) | 0.334 | | | | | k star (bias corrected MLE) | 0.329 | | | | |
| 48 | Theta hat (MLE) | 239.8 | | | | | Theta star (bias corrected MLE) | 243.4 | | | | |
| 49 | nu hat (MLE) | 45.41 | | | | | nu star (bias corrected) | 44.74 | | | | |
| 50 | Mean (detects) | 80.07 | | | | | | | | | | |
| 51 | | | | | | | | | | | | |
| 52 | Gamma ROS Statistics using Imputed Non-Detects | | | | | | | | | | | |
| 53 | GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20) | | | | | | | | | | |
| 55 | For such situations, GROS method may yield incorrect values of UCLs and BTVs | | | | | | | | | | |
| 56 | This is especially true when the sample size is small. | | | | | | | | | | |
| 57 | For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates | | | | | | | | | | |
| 58 | | | | | Minimum | 0.01 | | | Mean | 46.15 | |
| 59 | | | | | Maximum | 1100 | | | Median | 1 | |
| 60 | | | | | SD | 181.4 | | | CV | 3.932 | |
| 61 | | | | | k hat (MLE) | 0.17 | | | k star (bias corrected MLE) | 0.172 | |
| 62 | | | | | Theta hat (MLE) | 270.9 | | | Theta star (bias corrected MLE) | 268.8 | |
| 63 | | | | | nu hat (MLE) | 40.21 | | | nu star (bias corrected) | 40.52 | |
| 64 | | | | | Adjusted Level of Significance (β) | 0.048 | | | | | |
| 65 | | | | | Approximate Chi Square Value (40.52, α) | 26.93 | | | Adjusted Chi Square Value (40.52, β) | 26.8 | |
| 66 | | | | | 95% Gamma Approximate UCL (use when n>=50) | 69.43 | | | 95% Gamma Adjusted UCL (use when n<50) | 69.78 | |
| 67 | | | | | | | | | | | |
| 68 | Estimates of Gamma Parameters using KM Estimates | | | | | | | | | | |
| 69 | | | | | Mean (KM) | 46.57 | | | SD (KM) | 180.6 | |
| 70 | | | | | Variance (KM) | 32603 | | | SE of Mean (KM) | 16.75 | |
| 71 | | | | | k hat (KM) | 0.0665 | | | k star (KM) | 0.0705 | |
| 72 | | | | | nu hat (KM) | 15.7 | | | nu star (KM) | 16.63 | |
| 73 | | | | | theta hat (KM) | 700.1 | | | theta star (KM) | 660.8 | |
| 74 | | | | | 80% gamma percentile (KM) | 16.94 | | | 90% gamma percentile (KM) | 101 | |
| 75 | | | | | 95% gamma percentile (KM) | 268.1 | | | 99% gamma percentile (KM) | 874.8 | |
| 76 | | | | | | | | | | | |
| 77 | Gamma Kaplan-Meier (KM) Statistics | | | | | | | | | | |
| 78 | | | | | Approximate Chi Square Value (16.63, α) | 8.409 | | | Adjusted Chi Square Value (16.63, β) | 8.337 | |
| 79 | | | | | 95% Gamma Approximate KM-UCL (use when n>=50) | 92.1 | | | 95% Gamma Adjusted KM-UCL (use when n<50) | 92.9 | |
| 80 | | | | | | | | | | | |
| 81 | Lognormal GOF Test on Detected Observations Only | | | | | | | | | | |
| 82 | | | | | Shapiro Wilk Approximate Test Statistic | 0.904 | | | Shapiro Wilk GOF Test | | |
| 83 | | | | | 5% Shapiro Wilk P Value | 1.5273E-5 | | | Detected Data Not Lognormal at 5% Significance Level | | |
| 84 | | | | | Lilliefors Test Statistic | 0.131 | | | Lilliefors GOF Test | | |
| 85 | | | | | 5% Lilliefors Critical Value | 0.107 | | | Detected Data Not Lognormal at 5% Significance Level | | |
| 86 | Detected Data Not Lognormal at 5% Significance Level | | | | | | | | | | |
| 87 | | | | | | | | | | | |
| 88 | Lognormal ROS Statistics Using Imputed Non-Detects | | | | | | | | | | |
| 89 | | | | | Mean in Original Scale | 46.23 | | | Mean in Log Scale | 0.303 | |
| 90 | | | | | SD in Original Scale | 181.4 | | | SD in Log Scale | 2.991 | |
| 91 | | | | | 95% t UCL (assumes normality of ROS data) | 73.92 | | | 95% Percentile Bootstrap UCL | 75.89 | |
| 92 | | | | | 95% BCA Bootstrap UCL | 85.44 | | | 95% Bootstrap t UCL | 94.47 | |
| 93 | | | | | 95% H-UCL (Log ROS) | 426.5 | | | | | |
| 94 | | | | | | | | | | | |
| 95 | Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution | | | | | | | | | | |
| 96 | | | | | KM Mean (logged) | 1.356 | | | KM Geo Mean | 3.882 | |
| 97 | | | | | KM SD (logged) | 1.842 | | | 95% Critical H Value (KM-Log) | 3.14 | |
| 98 | | | | | KM Standard Error of Mean (logged) | 0.171 | | | 95% H-UCL (KM -Log) | 36.13 | |
| 99 | | | | | KM SD (logged) | 1.842 | | | 95% Critical H Value (KM-Log) | 3.14 | |
| 100 | | | | | KM Standard Error of Mean (logged) | 0.171 | | | | | |
| 101 | | | | | | | | | | | |
| 102 | DL/2 Statistics | | | | | | | | | | |
| 103 | DL/2 Normal | | | | | | | | DL/2 Log-Transformed | | |
| 104 | | | | | Mean in Original Scale | 46.36 | | | Mean in Log Scale | 1.063 | |
| 105 | | | | | SD in Original Scale | 181.4 | | | SD in Log Scale | 2.084 | |
| 106 | | | | | 95% t UCL (Assumes normality) | 74.04 | | | 95% H-Stat UCL | 49.23 | |

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 107 | DL/2 is not a recommended method, provided for comparisons and historical reasons | | | | | | | | | | | |
| 108 | | | | | | | | | | | | |
| 109 | Nonparametric Distribution Free UCL Statistics | | | | | | | | | | | |
| 110 | Data do not follow a Discernible Distribution at 5% Significance Level | | | | | | | | | | | |
| 111 | | | | | | | | | | | | |
| 112 | Suggested UCL to Use | | | | | | | | | | | |
| 113 | 95% KM (Chebyshev) UCL | | | | | 119.6 | | | | | | |
| 114 | | | | | | | | | | | | |
| 115 | Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. | | | | | | | | | | | |
| 116 | Recommendations are based upon data size, data distribution, and skewness. | | | | | | | | | | | |
| 117 | These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006). | | | | | | | | | | | |
| 118 | However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. | | | | | | | | | | | |
| 119 | | | | | | | | | | | | |

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | UCL Statistics for Data Sets with Non-Detects | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | User Selected Options | | | | | | | | | | | |
| 4 | Date/Time of Computation | ProUCL 5.114/07/2021 10:01:19 AM | | | | | | | | | | |
| 5 | From File | WorkSheet.xls | | | | | | | | | | |
| 6 | Full Precision | OFF | | | | | | | | | | |
| 7 | Confidence Coefficient | 95% | | | | | | | | | | |
| 8 | Number of Bootstrap Operations | 2000 | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | Zn | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | General Statistics | | | | | | | | | | | |
| 14 | Total Number of Observations | | | | | 107 | | Number of Distinct Observations | | | | 58 |
| 15 | | | | | | | | Number of Missing Observations | | | | 2 |
| 16 | Minimum | | | | | 1 | | Mean | | | | 173.1 |
| 17 | Maximum | | | | | 1800 | | Median | | | | 24 |
| 18 | SD | | | | | 348.9 | | Std. Error of Mean | | | | 33.73 |
| 19 | Coefficient of Variation | | | | | 2.016 | | Skewness | | | | 2.722 |
| 20 | | | | | | | | | | | | |
| 21 | Normal GOF Test | | | | | | | | | | | |
| 22 | Shapiro Wilk Test Statistic | | | | | 0.56 | | Shapiro Wilk GOF Test | | | | |
| 23 | 5% Shapiro Wilk P Value | | | | | 0 | | Data Not Normal at 5% Significance Level | | | | |
| 24 | Lilliefors Test Statistic | | | | | 0.322 | | Lilliefors GOF Test | | | | |
| 25 | 5% Lilliefors Critical Value | | | | | 0.0859 | | Data Not Normal at 5% Significance Level | | | | |
| 26 | Data Not Normal at 5% Significance Level | | | | | | | | | | | |
| 27 | | | | | | | | | | | | |
| 28 | Assuming Normal Distribution | | | | | | | | | | | |
| 29 | 95% Normal UCL | | | | | | | 95% UCLs (Adjusted for Skewness) | | | | |
| 30 | 95% Student's-t UCL | | | | | 229.1 | | 95% Adjusted-CLT UCL (Chen-1995) | | | | 238.1 |
| 31 | | | | | | | | 95% Modified-t UCL (Johnson-1978) | | | | 230.5 |
| 32 | | | | | | | | | | | | |
| 33 | Gamma GOF Test | | | | | | | | | | | |
| 34 | A-D Test Statistic | | | | | 4.272 | | Anderson-Darling Gamma GOF Test | | | | |
| 35 | 5% A-D Critical Value | | | | | 0.86 | | Data Not Gamma Distributed at 5% Significance Level | | | | |
| 36 | K-S Test Statistic | | | | | 0.148 | | Kolmogorov-Smirnov Gamma GOF Test | | | | |
| 37 | 5% K-S Critical Value | | | | | 0.0947 | | Data Not Gamma Distributed at 5% Significance Level | | | | |
| 38 | Data Not Gamma Distributed at 5% Significance Level | | | | | | | | | | | |
| 39 | | | | | | | | | | | | |
| 40 | Gamma Statistics | | | | | | | | | | | |
| 41 | k hat (MLE) | | | | | 0.333 | | k star (bias corrected MLE) | | | | 0.33 |
| 42 | Theta hat (MLE) | | | | | 519.8 | | Theta star (bias corrected MLE) | | | | 524.7 |
| 43 | nu hat (MLE) | | | | | 71.26 | | nu star (bias corrected) | | | | 70.6 |
| 44 | MLE Mean (bias corrected) | | | | | 173.1 | | MLE Sd (bias corrected) | | | | 301.4 |
| 45 | | | | | | | | Approximate Chi Square Value (0.05) | | | | 52.25 |
| 46 | Adjusted Level of Significance | | | | | 0.0478 | | Adjusted Chi Square Value | | | | 52.04 |
| 47 | | | | | | | | | | | | |
| 48 | Assuming Gamma Distribution | | | | | | | | | | | |
| 49 | 95% Approximate Gamma UCL (use when n>=50)) | | | | | 233.9 | | 95% Adjusted Gamma UCL (use when n<50) | | | | 234.8 |
| 50 | | | | | | | | | | | | |
| 51 | Lognormal GOF Test | | | | | | | | | | | |
| 52 | Shapiro Wilk Test Statistic | | | | | 0.917 | | Shapiro Wilk Lognormal GOF Test | | | | |
| 53 | 5% Shapiro Wilk P Value | | | | | 1.9455E-7 | | Data Not Lognormal at 5% Significance Level | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | | | | | Lilliefors Test Statistic | 0.0963 | Lilliefors Lognormal GOF Test | | | | | |
| 55 | | | | | 5% Lilliefors Critical Value | 0.0859 | Data Not Lognormal at 5% Significance Level | | | | | |
| 56 | Data Not Lognormal at 5% Significance Level | | | | | | | | | | | |
| 57 | | | | | | | | | | | | |
| 58 | Lognormal Statistics | | | | | | | | | | | |
| 59 | | | | | Minimum of Logged Data | 0 | | | | Mean of logged Data | 3.118 | |
| 60 | | | | | Maximum of Logged Data | 7.496 | | | | SD of logged Data | 2.257 | |
| 61 | | | | | | | | | | | | |
| 62 | Assuming Lognormal Distribution | | | | | | | | | | | |
| 63 | | | | | 95% H-UCL | 639.3 | | | | 90% Chebyshev (MVUE) UCL | 559.2 | |
| 64 | | | | | 95% Chebyshev (MVUE) UCL | 691.7 | | | | 97.5% Chebyshev (MVUE) UCL | 875.6 | |
| 65 | | | | | 99% Chebyshev (MVUE) UCL | 1237 | | | | | | |
| 66 | | | | | | | | | | | | |
| 67 | Nonparametric Distribution Free UCL Statistics | | | | | | | | | | | |
| 68 | Data do not follow a Discernible Distribution (0.05) | | | | | | | | | | | |
| 69 | | | | | | | | | | | | |
| 70 | Nonparametric Distribution Free UCLs | | | | | | | | | | | |
| 71 | | | | | 95% CLT UCL | 228.6 | | | | 95% Jackknife UCL | 229.1 | |
| 72 | | | | | 95% Standard Bootstrap UCL | 228.3 | | | | 95% Bootstrap-t UCL | 241.6 | |
| 73 | | | | | 95% Hall's Bootstrap UCL | 238 | | | | 95% Percentile Bootstrap UCL | 231.2 | |
| 74 | | | | | 95% BCA Bootstrap UCL | 242.4 | | | | | | |
| 75 | | | | | 90% Chebyshev(Mean, Sd) UCL | 274.3 | | | | 95% Chebyshev(Mean, Sd) UCL | 320.1 | |
| 76 | | | | | 97.5% Chebyshev(Mean, Sd) UCL | 383.7 | | | | 99% Chebyshev(Mean, Sd) UCL | 508.7 | |
| 77 | | | | | | | | | | | | |
| 78 | Suggested UCL to Use | | | | | | | | | | | |
| 79 | | | | | 95% Chebyshev (Mean, Sd) UCL | 320.1 | | | | | | |
| 80 | | | | | | | | | | | | |
| 81 | Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. | | | | | | | | | | | |
| 82 | Recommendations are based upon data size, data distribution, and skewness. | | | | | | | | | | | |
| 83 | These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006). | | | | | | | | | | | |
| 84 | However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. | | | | | | | | | | | |
| 85 | | | | | | | | | | | | |

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | UCL Statistics for Data Sets with Non-Detects | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | User Selected Options | | | | | | | | | | | |
| 4 | Date/Time of Computation | ProUCL 5.114/07/2021 10:01:19 AM | | | | | | | | | | |
| 5 | From File | WorkSheet.xls | | | | | | | | | | |
| 6 | Full Precision | OFF | | | | | | | | | | |
| 7 | Confidence Coefficient | 95% | | | | | | | | | | |
| 8 | Number of Bootstrap Operations | 2000 | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | Zn | | | | | | | | | | | |
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| 15 | | | | | | | | Number of Missing Observations | | | | 2 |
| 16 | Minimum | | | | | 1 | | Mean | | | | 173.1 |
| 17 | Maximum | | | | | 1800 | | Median | | | | 24 |
| 18 | SD | | | | | 348.9 | | Std. Error of Mean | | | | 33.73 |
| 19 | Coefficient of Variation | | | | | 2.016 | | Skewness | | | | 2.722 |
| 20 | | | | | | | | | | | | |
| 21 | Normal GOF Test | | | | | | | | | | | |
| 22 | Shapiro Wilk Test Statistic | | | | | 0.56 | | Shapiro Wilk GOF Test | | | | |
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| 25 | 5% Lilliefors Critical Value | | | | | 0.0859 | | Data Not Normal at 5% Significance Level | | | | |
| 26 | Data Not Normal at 5% Significance Level | | | | | | | | | | | |
| 27 | | | | | | | | | | | | |
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| 30 | 95% Student's-t UCL | | | | | 229.1 | | 95% Adjusted-CLT UCL (Chen-1995) | | | | 238.1 |
| 31 | | | | | | | | 95% Modified-t UCL (Johnson-1978) | | | | 230.5 |
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| 35 | 5% A-D Critical Value | | | | | 0.86 | | Data Not Gamma Distributed at 5% Significance Level | | | | |
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| 38 | Data Not Gamma Distributed at 5% Significance Level | | | | | | | | | | | |
| 39 | | | | | | | | | | | | |
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| 41 | k hat (MLE) | | | | | 0.333 | | k star (bias corrected MLE) | | | | 0.33 |
| 42 | Theta hat (MLE) | | | | | 519.8 | | Theta star (bias corrected MLE) | | | | 524.7 |
| 43 | nu hat (MLE) | | | | | 71.26 | | nu star (bias corrected) | | | | 70.6 |
| 44 | MLE Mean (bias corrected) | | | | | 173.1 | | MLE Sd (bias corrected) | | | | 301.4 |
| 45 | | | | | | | | Approximate Chi Square Value (0.05) | | | | 52.25 |
| 46 | Adjusted Level of Significance | | | | | 0.0478 | | Adjusted Chi Square Value | | | | 52.04 |
| 47 | | | | | | | | | | | | |
| 48 | Assuming Gamma Distribution | | | | | | | | | | | |
| 49 | 95% Approximate Gamma UCL (use when n>=50)) | | | | | 233.9 | | 95% Adjusted Gamma UCL (use when n<50) | | | | 234.8 |
| 50 | | | | | | | | | | | | |
| 51 | Lognormal GOF Test | | | | | | | | | | | |
| 52 | Shapiro Wilk Test Statistic | | | | | 0.917 | | Shapiro Wilk Lognormal GOF Test | | | | |
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| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | | | | | Lilliefors Test Statistic | 0.0963 | Lilliefors Lognormal GOF Test | | | | | |
| 55 | | | | | 5% Lilliefors Critical Value | 0.0859 | Data Not Lognormal at 5% Significance Level | | | | | |
| 56 | Data Not Lognormal at 5% Significance Level | | | | | | | | | | | |
| 57 | | | | | | | | | | | | |
| 58 | Lognormal Statistics | | | | | | | | | | | |
| 59 | | | | | Minimum of Logged Data | 0 | | | | Mean of logged Data | 3.118 | |
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| 61 | | | | | | | | | | | | |
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| 65 | | | | | 99% Chebyshev (MVUE) UCL | 1237 | | | | | | |
| 66 | | | | | | | | | | | | |
| 67 | Nonparametric Distribution Free UCL Statistics | | | | | | | | | | | |
| 68 | Data do not follow a Discernible Distribution (0.05) | | | | | | | | | | | |
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| 73 | | | | | 95% Hall's Bootstrap UCL | 238 | | | | 95% Percentile Bootstrap UCL | 231.2 | |
| 74 | | | | | 95% BCA Bootstrap UCL | 242.4 | | | | | | |
| 75 | | | | | 90% Chebyshev(Mean, Sd) UCL | 274.3 | | | | 95% Chebyshev(Mean, Sd) UCL | 320.1 | |
| 76 | | | | | 97.5% Chebyshev(Mean, Sd) UCL | 383.7 | | | | 99% Chebyshev(Mean, Sd) UCL | 508.7 | |
| 77 | | | | | | | | | | | | |
| 78 | Suggested UCL to Use | | | | | | | | | | | |
| 79 | | | | | 95% Chebyshev (Mean, Sd) UCL | 320.1 | | | | | | |
| 80 | | | | | | | | | | | | |
| 81 | Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. | | | | | | | | | | | |
| 82 | Recommendations are based upon data size, data distribution, and skewness. | | | | | | | | | | | |
| 83 | These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006). | | | | | | | | | | | |
| 84 | However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. | | | | | | | | | | | |
| 85 | | | | | | | | | | | | |

JM Environments
0427 893 668
37 Tooke St
COOKS HILL NSW 2300
ABN 67 166 341 288

# JME20005-5 – 21D and 21F School Drive Tomago

## Groundwater Contamination Assessment Report

**13 July 2021**

For and on behalf of JM Environments



**James McMahon PhD (Chem)**
**Principal Environmental Scientist**
Certified Environmental Practitioner No 1235
Site Contamination Specialist No SC41110
Licensed Asbestos Assessor LAA001286

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Mobile: 0427 893 668

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| 1 x pdf | JME20005-5 Groundwater Contamination Assessment Report 21D and 21F School Drive Tomago | Rev 2 | 13/07/2021 | Remondis<br>Jackson Environment and Planning | SM<br>MJ |
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Revision 1 addresses the relevant auditors comments received by email and dated 29 May 2021.

Revision 2 addresses the relevant auditors comments received by email and dated 8 July 2021.

# EXECUTIVE SUMMARY

This report presents a Groundwater Sampling and Analysis Quality Plan (SAQP) commissioned by Jackson Environment and Planning Pty Ltd on behalf of Remondis Australia Pty Ltd, and undertaken by JM Environments (JME) for 21D and 21F School Drive, Tomago NSW (the site). The site is identified as Lots 8 and 11 in Deposited Plan (DP) 270328 (as defined in the website maps.six.nsw.gov.au), and is approximately 3.9 hectares in area.

The objectives of this groundwater assessment were to:

- Assess the current groundwater contamination status of Lots 8 and 11; and
- Assess the groundwater flow direction.
- Improve understanding of the contamination status of groundwater beneath the site.

The site is situated in Tomago with the topography slow downward from north northwest to a south southeast. The groundwater flows in a similar direction.

The site has had a two main industrial land use including sand mining and metal fabrication (steel and aluminium). A soil contamination assessment by JME indicated the site soil in the eastern portion of site was impacted with arsenic, copper, cadmium, lead and zinc. Lead exceeded the human health criteria whilst the remaining metals exceeded the ecological criteria. The RAP prepared by JME recommended the excavation and removal of the significant lead impacted areas with capping and stormwater management to mitigate potential offsite ecological impacts of arsenic, copper, cadmium and zinc.

The groundwater monitoring undertaken on 13 April 2021 was undertaken after a significant rainfall event in March 2021 where 459mm of rainfall was recorded at the Williamtown Base and another 40mm of rainfall was recorded on 8 April 2021. By comparison, 46.8mm of rainfall was recorded in the thirty days preceding the groundwater monitoring event on 11 June 2021. The difference in rainfall preceding the monitoring events had an expected effect on the groundwater depth which was higher on the 13 April across the wells monitored. Similarly with the historical electrical conductivity data displayed in Graphs 1-3, the electrical conductivity of the two upgradient wells, MW6 and MW9, were relatively stable when compared to the remaining wells.

Groundwater monitoring indicated that the impact of arsenic, cadmium and copper in soil on the groundwater is negligible across both sampling rounds with the lower concentrations being observed in the second monitoring round. Cadmium has not exceeded the DGV in the samples in the recent monitoring rounds. Copper concentrations were slightly above the DGV in the first round, with no exceedances in the second monitoring round. Chromium slightly exceeded the DGV in both monitoring rounds. There were no exceedances of lead in either sampling rounds in the monitoring wells sampled.

Zinc was significantly elevated at MW7 with a concentration of 89 µg/L compared to trigger value of 15 µg/L in the first monitoring round and less than the trigger value with a concentration of 5µg/L in the second monitoring round. Monitoring well MW7 was in the vicinity, but down hydraulic gradient of, the highest soil zinc impacts reported in JME20005-2. It appears that the form of zinc present in the soil is more labile than the forms of the other metals that have impacted the soils in the vicinity of MW7. The difference in the zinc concentrations in the two monitoring rounds was likely to be caused by the 10-fold difference in rainfall in the thirty days leading up to the monitoring events. The highest zinc groundwater concentration, 220µg/L was detected in monitoring well MW10, located in Lot 11. It was reasonably assumed that a significant proportion of the surface soils were removed from Lot 11 and on this basis is expected that the zinc in this area would self attenuate.

The highest zinc soil impacts are associated with the highest lead soil impacts and, as such, are planned to be removed from the site or placed under a cap in the remediation process.

PFOA detections were significantly lower than the adopted human health trigger values and the NEMP2.0 99% ecological protection value. The PFOS+PFHxS concentration exceeded the adopted human health trigger by 20% in monitoring well MW4 in the second monitoring event and was below it the first monitoring event. The PFOS+PFHxS concentrations were below the adopted human health trigger in the remaining wells across both monitoring events. The concentration PFOS was detected in the downgradient wells were almost 30 times greater than the NEMP2.0 99% ecological protection value. Although the concentrations in the wells nearer to the Varley site are slightly higher and gradually diminish across the site, the concentrations of PFOS are similar enough in the PFAS impacted wells to consider its presence is unlikely to be caused by onsite migration from the neighbouring site. Therefore, it is considered possible that PFAS was either previously used on site or a significant (bush) fire threatened the site. Either way, the primary source has been removed from site and no significant PFAS soil concentrations (secondary source) were reported in JME2005-2, thus groundwater concentrations of PFAS should naturally attenuate with time. No PFOS was detected in the upgradient wells, MW6 and MW9.

It is difficult to assign trends in concentrations from 2 rounds of monitoring and its recommended that additional rounds of monitoring are undertaken to provide a better understanding of the background values. This will assist the assessment the remediation effort required to minimise the impact on offsite receptors in a sustainable fashion.

The site is within the TAC buffer zone. The TAC buffer zone is a special environment management zone and is define in the TAC conditions of consent and is derived from the ambient fluoride levels associated with TAC operations. Fluoride and aluminium concentrations were largest in the upgradient wells and appeared to diminish the further away from TAC the groundwater well was located. Aluminium concentrations were 160 times greater than the adopted trigger value in monitoring well MW9 and 129 greater in monitoring well MW6. On this basis, aluminium is considered to be highest ecological risk to down gradient receptors.

No further action is required for fluoride and aluminium because these will continue to migrate onto site whilst the TAC smelter is still operable. The concentration of fluoride does exceed the drinking water guidelines in some wells and therefore the drinking of groundwater should be strictly prohibited on site.

JME considers that the elevated arsenic, cadmium, copper, lead and zinc concentrations in soil had not had a significant impact on the site's groundwater. It was noted that zinc was significantly elevated in a monitoring well, MW7, near the sites boundary following a significant rainfall event and was below the DGV in the second monitoring event. The zinc impacted soils with the highest concentrations are associated with the lead impacted soils that are planned to be removed along with the placement of a cap over a portion of site. The cap, in conjunction with a storm water system was intended to reduce stormwater percolation through the soil thereby reducing the metal leaching potential. PFAS concentrations were considered not to be risk to human health and would attenuate as there were no continuing sources.

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# ACRONYMS

| | |
|---|---|
| ABC | ambient background concentration |
| ACM | asbestos containing material |
| AEC | Area of Environmental Concern |
| ANZECC | Australian and New Zealand Environment and Conservation Council |
| APHA | American Public Health Association |
| ARMCANZ | Agriculture and Resource Management Council of Australia and New Zealand |
| BaP | benzo[a]pyrene |
| BaP TEQ | benzo[a]pyrene toxicity equivalent quotient |
| BTEX | benzene, toluene, ethylbenzene and xylene |
| COC | Contaminant of Concern |
| CoC | Chain of Custody |
| CSM | Conceptual Site Model |
| DEC | Department of Environment and Conservation |
| DO | dissolved oxygen |
| DP | Deposited Plan |
| DQI | Data Quality Indicator |
| DSI | Detailed Site Investigation |
| EC | electrical conductivity |
| EIL | ecological investigation level |
| ENM | Excavated Natural Material |
| EPA | Environment Protection Authority |
| ESL | ecological screening level |
| HIL | health investigation level |
| HSL | health screening level |
| HSE | health, safety and the environment |
| JME | JM Environments |
| LEP | Local Environmental Plan |
| LOR | limit of reporting |
| LTEMP | Long Term Environmental Management Plan |
| mbgl | metres below ground level |
| NATA | National Association of Testing Authorities |

| | |
|---|---|
| NEPM | National Environment Protection (Assessment of Site Contamination) Measure |
| OCP | organochlorine pesticides |
| PAH | polycyclic aromatic hydrocarbons |
| PCB | polychlorinated biphenyls |
| PID | photoionisation detector |
| PPE | personal protective equipment |
| PSH | phase separated hydrocarbons |
| QA/QC | Quality Assurance/Quality Control |
| RAP | Remedial Action Plan |
| RL | relative level |
| RPD | relative percentage difference |
| SAQP | Sampling and Analysis Quality Plan |
| SD | standard deviation |
| SGS | SGS Australia, Sydney |
| TPH | total petroleum hydrocarbons |
| SWMS | Safe Work Method Statement |
| TCLP | toxicity characteristic leaching procedure |
| TRH | total recoverable hydrocarbons |
| UCL | upper confidence limit |
| USEPA | United States Environment Protection Authority |
| UST | underground storage tank |
| VCH | volatile chlorinated hydrocarbons |
| VOC | volatile organic compounds |
| WA DoH | Western Australian Department of Health |

# 1 INTRODUCTION

This report presents a Groundwater Sampling and Analysis Quality Plan (SAQP) commissioned by Jackson Environment and Planning Pty Ltd on behalf of Remondis Australia Pty Ltd, and undertaken by JM Environments (JME) for 21D and 21F School Drive, Tomago NSW (the site). The site is identified as Lots 8 and 11 in Deposited Plan (DP) 270328 (as defined in the website maps.six.nsw.gov.au), and is approximately 3.9 hectares in area. The site location is shown in Figure 1.

## 1.1 Background

### 1.1.1 General Area Information

The site is located in Tomago NSW. Beneath the site is the Tomago Sand Aquifer. Hunter Water extract water from this aquifer and following treatment the extracted water forms part of the Hunter regions reticulated drinking water supply. Hunter Waters groundwater extraction areas is the north and west of the site. It is expected the regional ground water flow would be toward the Hunter River and a s such groundwater from the site is not likely to affect the quality of groundwater extracted by Hunter Water.

The Williamtown RAAF base is located approximately 9.5km north west of the site. The per- and poly-fluoroalkyl substances (PFAS) groundwater contamination associated Williamtown RAAF base are unlikely to impact on the site's groundwater. Located to the west of the site the Varley Group manufacturing facility. Amongst the specialised vehicle manufactured include fire fighting trucks. On that basis it was considered that testing of new fire trucks, including spraying PFAS foams, feasible.

The Tomago Aluminium Company (TAC) is located just over 200m to the west of the site. It has been smelting aluminium since 1983. The "*Tomago Aluminium Company Pty Ltd Production Capacity Increase 585,000 to 600,000 tonnes Saleable Production Project Description and Statement of Environment Effects*", dated August 2016 reports that fluoride concentrations measured in its "eastern boundary bores" ranged from 5.2-6.6mg/L between 2011 and 2015. JME has assumed that the fluoride concentration are an average of six wells located off the TAC site and in proximity to the TAC eastern boundary.

### 1.1.2 Detailed Soil Assessment

A Detailed Contamination Assessment (DCA) was prepared by JME, dated 17 July 2021, (herein referred to as JME2005-2).. JME2005-2 reported the site was mostly flat, and divided into two parts. The western part of the site (Lot 11) was paved, and contained two large sheds, and some smaller buildings and water tanks. Beneath the pavement was brown gravelly sand, containing some concrete and brick rubble to a depth of between 1mbgl and 1.8mbgl and was interpreted to be fill. This material was assessed during the construction phase as meeting the criteria for general solid waste or excavated natural material, and for commercial/industrial land use. Light brown fine to medium grained sand beneath the fill was interpreted as representing in-situ, 'natural' material.

The eastern part of the site (Lot 8) was unpaved, and sparsely covered with grass and other low vegetation. Fill mounds including concrete, metal and timber were observed, and concrete beams and concrete-filled tyres had been stockpiled in the northern part of Lot 8.

Fill, comprising brown to black sand, and containing some plastic, road base gravel, brick, concrete, metal and rocks, was observed to a depth of approximately 0.5 - 1mbgl across much of

Lot 8. Elevated zinc and copper concentrations in this material were considered to be consistent with the use of sandblasting in the metal manufacturing process.

Beneath the fill, brown sand, interpreted as representing in-situ material, appeared to be largely uncontaminated.

Elevated cadmium, arsenic and lead concentrations were observed in dark sandy material on the surface in the northeast corner of the site.

Based on this assessment, it was considered that the site had been impacted by contamination comprising heavy metals at concentrations exceeding guideline values for commercial/ industrial land use. JME considers that the site could meet the environmental requirements for commercial/industrial land use subject to the development and successful implementation of an appropriate Remedial Action Plan. In Lot 8, the RAP recommended the excavation and removal of the human health impacted material, capping the remainder of site with a low permeable material and installation of a stormwater drainage system.

### 1.1.3 Groundwater Monitoring

At the request of Remondis, groundwater contamination was not considered in JME20005-2 for budgetary purposes at the early stages of this project. JME had conducted groundwater monitoring during construction and operational phase of the Midal Cables facility, the previous land use on Lot 11. Midal Cables produced electrical transmission cable from molten aluminium produced at TAC. Midal Cables operated from March 2014-April 2017.

Construction groundwater monitoring was required as part of the consent conditions for the Midal Project on Lot 11. Construction groundwater monitoring was aimed primarily at dewatering areas of the site for building sumps and footings in the north western portion of Lot11 and hence potential activation of potential acid sulfate soils. Three groundwater wells, MW1-MW3 were installed along the north western boundary of Lot 11 and the depth to groundwater and pH were monitored. There was a drop of around 1.1-1.4 pH units in one month of the monitoring, May 2013, which was at the height of the construction dewatering. The pH returned to the normal range in the respective wells the following month. Monitoring wells MW1-MW3 were removed during the building project. Well locations are shown in Figure 2.

Operational ground water monitoring was required to satisfy the Operational Environmental Management Plan (OEMP) and the Environmental Protection Licence 20254 (EPL) for the Midal Cables International plant.

The OEMP recognised that there were potential impacts on the local groundwater quality from use of the Waste Water Treatment Plant (WWTP) and spills entering the storm water infiltration system. The OEMP required that:

- Static water level, pH and electrical conductivity (EC) on a monthly basis for the first quarter of operation then quarterly thereafter; and
- Major ions (Ca, Mg, Na, K, Cl, $CO_3^{2-}$, $HCO_3^-$, $SO_4^{2-}$), dissolved metals (Al, As, Cr, Cd, Cu, Fe, Hg, Mn, Ni, Pb, Zn), nutrients (total nitrogen (including ammonia) and total phosphorous), and total petroleum hydrocarbons (TPH ($C_6$-$C_{36}$)) on an annual basis,

be monitored in one up gradient well (OEMP monitoring well MW6, EPL Point 8) and two down gradient wells (monitoring well MW4/EPL Point 6 and monitoring well MW5/EPL Point 7). Well locations are shown in Figure 2.

The EPL required that:

- Static water level, pH and EC on a monthly basis; and

- Nutrients and hydrocarbons on a quarterly basis,
- be monitored in MW4/EPL point 6, MW5/EPL Point 7 and MW6/EPL Point 8.

The groundwater monitoring results for monitoring wells MW4-MW6 from February 2013 until December 2016 are summarised in Summary Table 1. The heavy metal concentrations were relatively stable over the monitoring period and no increasing or decreasing trends were detected using the Mann-Kendall Trend Test Analysis.

Elevated soil concentrations of arsenic, cadmium, copper lead and zinc were reported in JME2005-2. The minimum and maximum concentrations of these metals across monitoring wells MW4-MW6 were:

- Arsenic: <1µg/L - 2µg/L
- Cadmium: <0.1µg/L – 0.3µg/L;
- Copper: <1µg/L - 5µg/L;
- Lead: <1µg/L - 2µg/L; and
- Zinc: 5µg/L - 230µg/L.

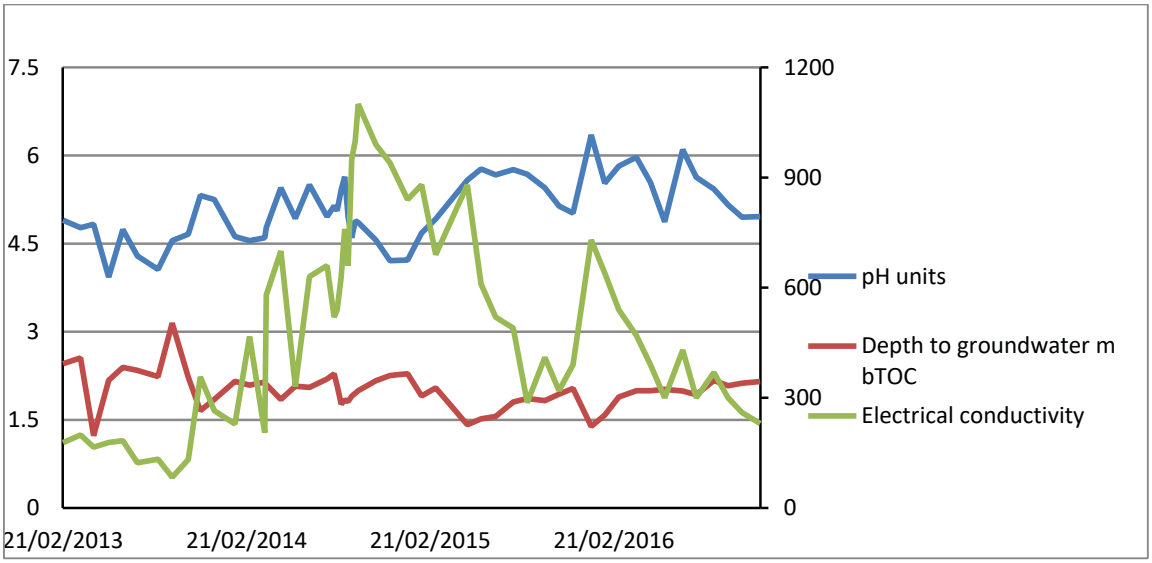
The WWTP was decommissioned around April 2015. A sewage pump out tank system was used in its stead.

Metal impacted fill on Lot 8 was unlikely to affect the groundwater on Lot 11. However:

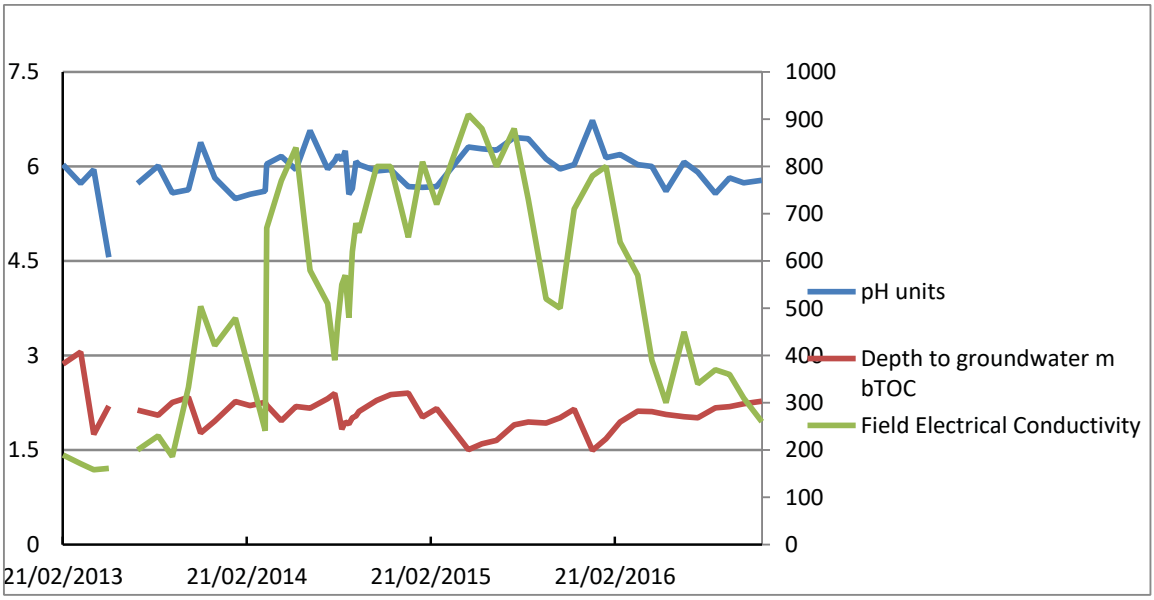
- the mean concentration of copper was greater than the default guideline value in each of the monitoring wells;
- the mean concentration of zinc was 4.8 times greater than the DGV in monitoring well MW4, 2.8 times greater than the DGV in monitoring well MW5.

The mean zinc concentrations did not exceed the DGV in monitoring well MW6. This indicates that the groundwater under Lot 11 was impacted by the previous landuses. However, JME20005-2 had assessed that the soil on Lot 11 was not significantly impacted by heavy metals.

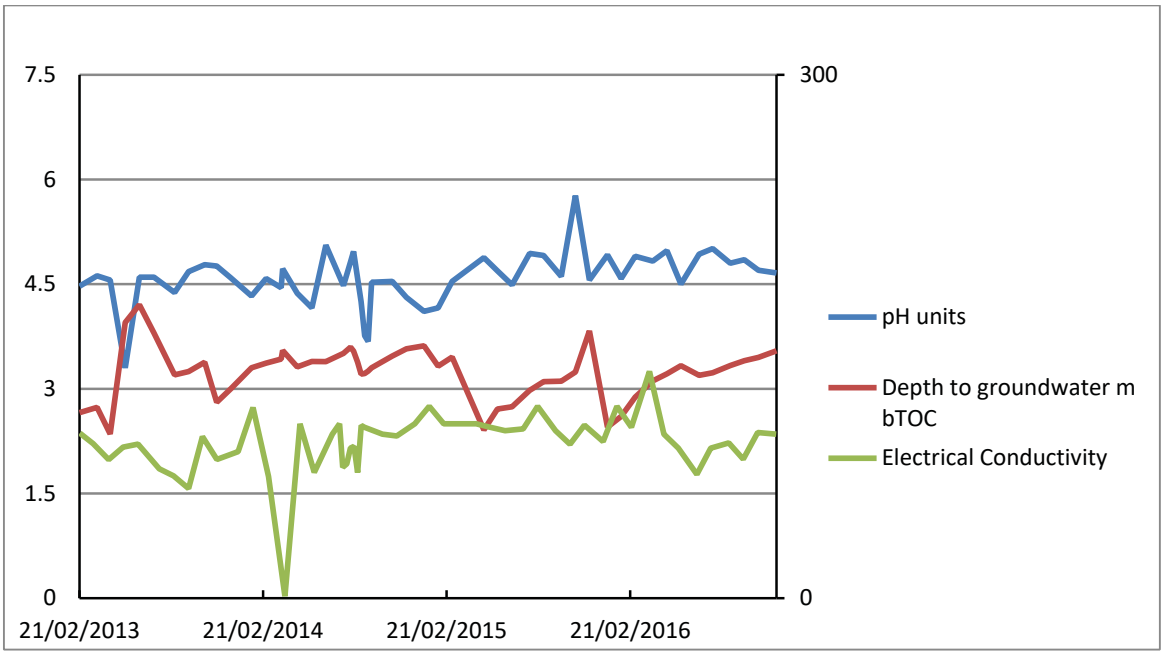
Electrical conductivity, pH and depth to groundwater was also monitored in monitoring wells MW4-MW6 from February 2013 until December 2016. These results are summarised in Graphs 1-3 below.




**Graph 1:** Monitoring Well MW4 historic field data




**Graph 2:** Monitoring Well MW5 historic field data




**Graph 3:** Monitoring Well MW6 historic field data

The upgradient well, MW6, returned relatively consistent electrical conductivity results over the monitoring period. The downgradient wells, MW4 and MW5, returned varied elecetrical conductivity results throughout the monitoring period.

### 1.2 Objectives

The objectives of this groundwater assessment were to:

- Assess the current groundwater contamination status of Lots 8 and 11; and
- Assess the groundwater flow direction.
- Improve understanding of the contamination status of groundwater beneath the site.

# 2 CONCEPTUAL SITE MODEL

Based on the summary information above and previous reports a conceptual site model was prepared.

## 2.1 Site History Summary

The site lies on a former sand mine and hence it is likely that the top 3-4m has been disturbed and the heavy minerals been extracted. "Tailing slimes" often have low permeabilities and are enriched in iron. Post sand mining the site was previously part of larger steel fabrication site. Metal cleaning and polishing via sand blasting was common practice for such a land use. Heavy minerals extracted from sand mining such as rutile and ilmenite and, at times, Pasminco slag sand were used as sandblasting media. From 2012-2013 the western portion of site was redeveloped in the Midal Cables facility. The Midal Cables facility manufactured aluminium transmission cable from molten aluminium sourced from the nearby TAC. During construction the site surface was classified as insitu GSW and ENM by JME. Due to the thickness of the concrete slabs and relatively short life of the facility it is considered very unlikely that the Midal operations impacted on the groundwater quality of the site with the exception of a former septic system in the southern portion of Lot 11 which is no longer in use. This is supported by the groundwater monitoring discussed in Section 1.1.3. The manufacture of aluminium cable from molten metal included the use of an emulsion to lubricate the cable strands during the drawing process. Excess emulsion was capture in an "emulsion trench" and recycled through the process. The emulsion trench was located in the northern Midal building. The trench was constructed of cement below the water table. No groundwater has appeared to have seeped into the disused trench since Midal has shut down and therefore it reasonable assume that emulsion did not leak into the groundwater when Midal was operating.

The site is adjacent to a specialised vehicle manufacturer and it is considered likely that hydrocarbons, degreasers and PFAS were used. PFAS in soil across the site was assessed in JME2005-2 and no significant concentrations were detected.

TAC is situated to the west of the site. TAC is likely to be up hydraulic gradient from the site.

## 2.2 Site Condition

The site appears to contain fill extended to approximately 0.3 to 1.0mbgl, and was observed to be primarily sand and include traces to some:

- Brick;
- Ceramics;
- Glass;
- Concrete;
- Coal;
- Ash; and
- Slag.

Contamination, above the adopted guidelines for industrial use, within the fill had been found to include heavy metals (arsenic, cadmium, copper, lead and zinc)

Beneath the fill, a layer of light grey to dark grey sand was observed, interpreted as representing reinstated sand mining tailings.

## 2.3 Source Zone Characteristics

### 2.3.1 Primary Groundwater Contaminant Sources

The primary source of impact on the site was considered to be heavy metal contamination resulting from sandblasting media and the metallic surface upon which they were used.

The primary source of offsite groundwater impact is the potential use of hydrocarbons, degreasers and fire fighting foams on the western neighbouring site and the smelting of aluminium further to the west.

### 2.3.2 Identified Contaminants of Concern

The groundwater chemicals of concern include site were considered to include:

- Hydrocarbons:
  - TRH F1
  - TRH F2
  - Benzo[a]pyrene (BaP)
  - Total PAH
- Degreasers (Chlorinated hydrocarbons, CHCs)
- Heavy metals
  - Aluminium
  - Arsenic
  - Cadmium
  - Copper
  - Lead and
  - Zinc
- PFAS

## 2.4 Contaminant Transport Mechanisms

Primary transport mechanism that were considered to have potential to cause the migration of contamination was predominantly the infiltration of stormwater and groundwater flow.

If present, volatile and semi volatile hydrocarbons (VHC and SVHC) in groundwater have the potential to partition into the air in the soil pore spaces and can move into buildings, ambient air, confined spaces or excavations on a site.

## 2.5 Contaminant Exposure Pathways

For contaminated soil to pose a risk to a receptor, a complete exposure pathway must exist between the source of the impact and the receptor. A complete exposure pathway consists of the following elements:

- A source and mechanism for release;
- A storage and/or transport medium (e.g. contaminants stored in groundwater and transported into the atmosphere via volatisation);
- An exposure point, where the receptor comes in contact with the contamination; and
- An exposure route (e.g. inhalation).

It was considered that construction and associated earthworks during the proposed redevelopment of the site had the potential to create human health exposure pathways, including:

- Exposure to excavation/construction workers on the proposed development via dermal contact and/or incidental ingestion of COCs in groundwater; and

- Soil gas during excavation could move into the atmosphere, creating an exposure pathway to inhalation by site workers and patrons of nearby premises.
- Inhalation by site users and visitors of soil vapour through joins or fissures in the concrete slab.

Other potential exposure pathways include groundwater dependent ecosystems and surface water at the groundwater discharge point.

### 2.6 Identification of Receptors at Risk

Potential sensitive receptors were considered to include:

- Site workers;
- Maintenance workers;
- Trespassers; and
- Neighbouring groundwater dependent ecosystems.

TABLE 1: DP2018 CONCEPTUAL SITE MODEL

| Known and Potential Primary Sources | Contaminants of Concern | Release Mechanism | Potential Impacted Media | Potential Receptors | Exposure Pathways |
|---|---|---|---|---|---|
| Site surface soils | Arsenic, cadmium, copper, lead and zinc | Infiltration of storm water | Groundwater | Site workers<br>Maintenance workers<br>Trespassers<br>Neighbouring groundwater dependent ecosystems | Inhalation<br>Dermal contact<br>Incidental ingestion<br>Uptake of groundwater via the root system |
| Up hydraulic gradient groundwater | TRH, PAH, BTEX, CHC, PFAS, aluminium and fluoride | On site migration of groundwater | Groundwater and soil vapour | | |

# 3 DATA GAP ANALYSIS

The following gaps in the current data set were identified as needing to be addressed in order to gain a more complete understanding of the contamination status of the site.

## 3.1 Groundwater

The groundwater contamination status for a broad range of contaminants has been monitored on Lot 11 from 2013-2017. Although having a similar previous history, the groundwater contamination status of Lot 8 is unknown.

Additional groundwater assessment was required to increase confidence that groundwater contamination did not represent a significant AEC on the site. Groundwater assessment would assess:

- Depth and flow direction of groundwater beneath the site; and
- Contamination status of groundwater beneath the sites.

Collected data would be used to inform a decision on whether or not groundwater contamination (if present) represented regional contamination, or site-specific impact and whether remediation of groundwater, if required, is practical or not.

# 4 DATA QUALITY OBJECTIVES

## 4.1 Step 1 State the Problem

Previous assessments indicated that the site has been used for sand mining, steel manufacturing and aluminium smelting purposes, and that the surface of the site has been covered with uncontrolled fill. The previous site uses have caused the surface soils to be impacted with arsenic, cadmium, copper, lead and zinc. Offsite upgradient groundwater is known to be impacted with fluoride and potentially impacted with VHC, SVHC, CHC, PFAS and aluminium.

Problems to be addressed in this SAQP are:

- The contamination status of the groundwater beneath the site; and
- The extent, if any, of on-site migration of up gradient contamination;
- The impact of groundwater contamination on the proposed site use;
- The groundwater flow direction, hydraulic gradient and groundwater velocity.
- Potential impact of groundwater contamination on sensitive receptors.

## 4.2 Step 2 Identify the Decisions

The decisions that are required to be made are:

- What is the groundwater contamination status of the site?
- Is groundwater beneath the site being contaminated by on-site contamination;
- Is contamination being transported off site via groundwater migration;
- Is contamination being transported on site via groundwater migration; and
- Is remediation of the groundwater required?

## 4.3 Step 3 Identify the Inputs into the Decision

The primary inputs to the decision regarding soil contamination described in Step 2 are:

- Analytical results from groundwater samples collected by JME;
- Survey data and depth to groundwater data;
- Groundwater pump test data; and

- Assessment of analytical results against investigation criteria.

The primary inputs to the decision regarding groundwater contamination described in Step 2 are:

- Groundwater gradient obtained from current and proposed groundwater wells on and near the site;
- Groundwater analytical results from neighbouring locations (where available);
- Analytical results from groundwater samples collected by JME; and
- Assessment of analytical results against investigation criteria.

### 4.3.1 Groundwater Assessment Criteria

**Drinking Water**

Because the site is located in an area with a reticulated water supply, it is unlikely that groundwater would be used for domestic drinking purposes. The nearest registered domestic use groundwater well is approximately 440m down gradient (south) of the site; Likewise, it was considered unlikely groundwater would be used for recreational purposes, such as the filling of swimming pools, in an area with a reticulated water supply.

Due to the shallow (<1m) depth of groundwater beneath the site, it was considered that trench workers may potentially contact and incidentally ingest groundwater seepage in trenches on the site.

Drinking water validation criteria were established from:

- National Health and Medical Research Council (NHMRC) Australian Drinking-Water Guidelines 6, Version 3.4 Updated October 2017. National Water Quality Management Strategy;
- World Health Organization (WHO)2017 Guidelines for drinking-water quality, 4th edition, incorporating the 1st addendum; and
- USEPA RSLs Residential Tap Water Criteria. Online database of assessment criteria that are current as of November 2017.

It was considered that incidental ingestion would only involve small amounts of groundwater, therefore a factor of 10 has been applied to non-carcinogenic contaminant criteria. It is noted that NHMRC guidelines for toluene, ethyl benzene and xylene were not adjusted by a factor of ten as they are based on the inhalation exposure pathway only. Criteria derived by the USEPA for carcinogenic compounds were multiplied by x10 to adjust the target cancer risk level from 1:1,000,000 to 1:100,000, to be consistent with Australia's recommended target cancer risk level.

**Groundwater Vapour**

Due to the proposed redevelopment incorporating ground floor offices, vapour intrusion was considered to be a potential exposure pathway on the site.

Groundwater beneath the site is expected to be about 2m below ground surface. CRC CARE Technical Report No. 10 Health screening levels for petroleum hydrocarbons in soil and groundwater states that at depths of <2m, soil vapour measurements should be compared with soil vapour HSLs. Soil vapour HSLs have been sourced from Table 1A(3) Soil HSLs for vapour

intrusion – Low-high density residential, in the NEPM Schedule B1, Guideline on Investigation Levels for Soil and Groundwater (see Section 5.3).

CRC CARE Technical Report No. 10 provides HSLs for contaminants in soil vapour in Table B1 Soil Vapour Health Screening Levels. Soil Vapour criteria were established for Intrusive Maintenance Worker (Shallow Trench) – 0m to <2m, as well as for HSL-D (Commercial/Industrial) use.

Adopted criteria are shown in Table 3 (below).

**Protection of Aquatic Ecosystems**

The investigation levels presented on the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG) website are considered applicable for the protection of the ecosystems of receiving waters. As these guidelines apply to receiving waters, it is generally conservative to apply these to groundwater on site.

ANZG advocates a site-specific approach to developing guideline trigger values, based on such factors as local biological effects data, the current level of disturbance of the ecosystem, etc. The guidelines provide detailed approaches and advice on identifying appropriate guideline values for selected indicators. These guideline values help to ensure that agreed community values and their management goals are protected.

The nearest surface water receptor is in the tidal zone of the Hunter River, approximately 890m south of site. The default guideline values from ANZG were based on slightly to moderately disturbed marine water.

**PFAS National Environmental Management Plan Version 2.0**

The Heads of EPAs Australia and New Zealand (HEPA) and the Australian Government Department of the Environment and Energy (DoEE) *PFAS National Environmental Management Plan*, January 2018 (the NEMP2.0) provides environmental guidance values that represent a nationally agreed suite that should be used to inform site investigations.

The potential sources of PFAS groundwater contamination were considered to be either;

- Groundwater migration from the adjoining site to the west; and/or
- Direct application to land from
    - bush firefighting activities; and/or
    - The testing of firefighting equipment manufactured on the site to the west.

No significant PFAS contamination was detected in the soils collected from five locations as reported in JME2005-2. However, JME20005-2 does indicate that that surface soils were removed from Lot 11 during the Midal project development.

NEPM2.0 requires that following the identification of a credible source or sources of PFAS, priority should be given to early investigation of risks to sensitive off-site receptors. Considerations of for a qualitative human health and ecological risk assessment are summarised in Table 2.

TABLE 2: Qualitative Human Health and Ecological PFAS Risk Assessment

| Aspect | Consideration | Qualitative Risk |
|---|---|---|
| ingestion by livestock of contaminated stockwater (surface water and/or groundwater) and of contaminated grazing material and soil | Open paddocks 300m to south of site do not appear to be used for livestock. No nearby downgradient stock use bores | Very low |

| Aspect | Consideration | Qualitative Risk |
|---|---|---|
| Human intake of contaminated water through drinking or cooking | Because the site is located in an area with a reticulated water supply, it is unlikely that groundwater would be used for domestic drinking purposes. The nearest registered domestic use groundwater well is approximately 440m down gradient (south) of the site; | Low-Medium |
| Human exposure to contaminated water through activities such as cleaning, showering and swimming | As above. | Low-Medium |
| Consumption by humans of foodstuffs (including seafood, meat, eggs, grains, milk, fruit and vegetables) produced in the impacted area. | Rural residential properties to the south. Paddocks are overgrown with no evidence of livestock. It is possible to raise livestock/chickens etc in the future. | Low-Medium. |
| Exposure of terrestrial (including avian) and aquatic organisms to contaminated soil, sediments and/or water | Groundwater not expected to surface until it reaches the Hunter River. By this stage it would be likely to have undergone significant natural dilution. | Not significant |
| Ingestion by terrestrial (including avian) and aquatic organisms of contaminated plants and/or animals | Groundwater is around 1-1.5m below ground surface and therefore it is unlikely that root systems of grasses in lands adjoining the site would not intercept it. | Not significant |

Based on the qualitative risk assessment it was considered that drinking water guidelines supplied in NEMP2.0 are appropriate for this assessment.

Adopted criteria are shown in Table 3 (below).

TABLE 3: ADOPTED GROUNDWATER CONTAMINANT TRIGGER VALUES

| Analyte Name | Units | Adopted Trigger Value | Reliability/Comment |
|---|---|---|---|
| Benzene | µg/L | 500 | moderate |
| Toluene | µg/L | 180 | unknown |
| Ethylbenzene | µg/L | 80 | unknown |
| m/p-xylene | µg/L | 75 | unknown |
| o-xylene | µg/L | 350 | unknown |
| Chloroform | µg/L | 370 | unknown |
| 1,1,2,2-Tetrachloroethylene | µg/L | 70 | unknown |
| 1,1,2-Trichloroethylene | µg/L | 330 | unknown |
| 1,1-Dichloroethylene | µg/L | 700 | unknown |
| Chloroethylene | µg/L | 100 | unknown |
| 1,1,1-Trichloroethane | µg/L | 270 | unknown |
| 1,1,2,2-Tetrachloroethane | µg/L | 400 | unknown |
| 1,1,2-Trichloroethane | µg/L | 1,900 | unknown |
| 1,2-Dichloroethane | µg/L | 1,900 | unknown |
| 1,1-Dichloropropane | µg/L | 500 | unknown |
| 1,2-Dichloropropane | µg/L | 900 | unknown |

| Analyte Name | Units | Adopted Trigger Value | Reliability/Comment |
|---|---|---|---|
| 1,3-Dichloropropane | µg/L | 1,100 | unknown |
| TRH C6-C10 (F1) | µg/L | 50 | unknown |
| TRH >C10-C16 (F2) | µg/L | 60 | LOR |
| TRH >C16-C34 (F3) | µg/L | 500 | LOR |
| TRH >C34-C40 (F4) | µg/L | 500 | LOR |
| Naphthalene | µg/L | 50 | moderate |
| Phenanthrene | µg/L | 0.6 | unknown |
| Anthracene | µg/L | 0.01 | unknown |
| Fluoranthene | µg/L | 1.0 | unknown |
| Benzo(a)pyrene | µg/L | 0.1 | unknown |
| Arsenic | µg/L | 13* | unknown |
| Cadmium, Cd | µg/L | 0.7 | very high |
| Chromium, Cr (VI) | µg/L | 4.4 | very high |
| Copper, Cu | µg/L | 1.3 | very high |
| Lead, Pb | µg/L | 4.4 | low |
| Nickel, Ni | µg/L | 7 | very high |
| Zinc, Zn | µg/L | 15 | moderate |
| Aluminium (pH>6.5) | µg/L | 55* | unknown |
| Mercury | µg/L | 0.1 | very high |
| Sum of PFOS/PFHxS | µg/L | 0.07 | unknown |
| PFOA | µg/L | 0.56 | unknown |
| Fluoride | mg/L | 15 | Australian Drinking Water guideline x 10 |

### 4.4 Step 4 Define the Site Boundaries

The lateral extent of the site was defined as Lots 8 and 11 in Deposited Plan (DP) 270328 (as defined on the website maps.six.nsw.gov.au).

The vertical extent of assessment was defined as groundwater up to 2m below the apparent groundwater table.

This assessment was expected to take place within April 2021.

### 4.5 Step 5 Develop an Analytical Approach

The analytical approach will be as follows:

- DQIs will be applied as per Section 8.1. If the results of the analytical data validation are acceptable with respect to the DQIs, then the data will be deemed suitable for the purposes of this assessment; and
- Results from previously and newly installed groundwater monitoring wells will be assessed. If contaminant concentrations are less than the trigger values established in Section 4.3.1, or are considered to be comparable to regional values, then it will be considered that no groundwater-specific remediation is required. Otherwise, appropriate contingency measures will be assessed.

### 4.6 Step 6 Specify the Performance or Acceptance Criteria

The null hypothesis was that groundwater beneath the site has not been significantly contaminated by current and previous on and offsite activities.

Potential decision errors are considered to include:

- Sampling errors, which occur when collected samples are not representative of conditions within the investigation area; and
- Measurement errors, which occur during sample collection, handling, preparation, analysis and data production.

These errors may lead the decision maker to make the following errors:

- Deciding that the investigation area is suitable for industrial/commercial land use when it is actually not; and
- Deciding that the investigation area is not suitable for r industrial/commercial land use when it actually is.

An assessment will be made as to the likelihood of a decision error being made based on the results of the QA/QC assessment, and the closeness of analytical results to the investigation criteria outlined in Section 4.3. It is considered that a margin for error is accounted for by the level of conservatism built into guideline trigger values.

### 4.7 Step 7 Optimise the Design for Obtaining Data

In order to optimise the quality of data collected, JME will use:

- Licensed drillers and experienced JME field staff to install wells and collect samples;
- Registered surveyors to survey the wells;
- Calibrated equipment to collect field data; and
- NATA-accredited laboratories. Laboratory analysis will be in accordance with the requirements of the NEPM (Schedule B3) and will be referenced to USEPA or APHA methods.

Details of sampling methods and analytical requirements are discussed in Section 5.

## 5 SAMPLING PLAN

### 5.1 Groundwater Assessment

In order to assess the contamination status of groundwater beneath the site, JME proposes to install three groundwater monitoring wells across the site – one up-gradient wells near the western boundary, and two down-gradient wells near the eastern boundary. JME will also utilise three existing wells used for the operational groundwater monitoring of the Midal Cables Facility. It is intended that the positioning of these wells will allow for:

- Assessment of groundwater gradient and flow direction;
- Comparison of the contamination status of groundwater entering and leaving site;
- Assessment of the impact of on-site contamination of groundwater;
- Comparison of current groundwater conditions with historic groundwater conditions; and
- Assessment of potential for off-site migration of groundwater to cause on-site contamination to impact a receiving body of water.

### 5.2 Installation of Wells

Boreholes will be drilled using a drilling rig fitted with hollow flight augers, and logged to record changes in lithology and sampling intervals. Particular note will be made of the base of fill, and depth at which groundwater is encountered, based on the driller's observations and visual observation of samples.

In each well, 3m of machine-slotted 50mm class 18 u-PVC screen will be installed over an interval from 2m below to 1m above the perceived top of groundwater. 50mm solid class 18 u-PVC casing will be installed from the top of the slotted screen to approximately 0.5m above the ground surface. The annulus around the casing will be filled with clean coarse sand and gravel to approximately 0.3m above the top of the slotted casing. Bentonite will be placed in the annulus above the sand, and protruding casing will be left in place as a standpipe.

Following installation, groundwater wells will be developed using a Typhoon™ submersible pump to surge the hole, and then to rapidly pump out accumulated groundwater. This procedure is designed to remove from the hole sediment and water stirred up during drilling operations. Prior to well development, any personnel handling decontaminated well development equipment that directly contacts bore water must wash their hands with plain soap and rinse thoroughly in tap water before donning a clean, new pair of disposable nitrile gloves. A new pair of nitrile gloves must be worn for each well developed.

### 5.3 Sampling Plan

Groundwater gauging and sampling collection will be conducted approximately one week after the installation of groundwater wells, to allow them to settle and equilibrate. Sampling will be conducted in accordance with the following protocols:

- Prior to purging, the presence or absence of phase separated hydrocarbons (PSH) and depth to groundwater will be measured using an oil-water interface probe;
- Prior to sampling, each well will be purged using a low flow peristaltic pump until uniform turbidity is (visually) obtained, and field water quality parameters (electrical conductivity (EC), pH and temperature) have stabilised to within 10% difference for three successive readings at least three minutes apart. If water quality parameters do not stabilise, groundwater will not be sampled until at least three times the volume of the sampling equipment has been purged; and
- Field measurements - pH, EC, temperature, dissolved oxygen (DO) and redox potential (Eh) – will be recorded during purging using equipment confirmed not to impact water quality.

Sampling QA/QC protocols are described in Section 8.

## 6 HEALTH, SAFETY AND THE ENVIRONMENT

### 6.1 Hazards and Control Measures

During drilling and sampling operations, there is potential for hazards to be encountered that present risks to health, safety and the environment (HSE). These risks will be addressed via the use of Safe Work Method Statements (SWMS), including considerations as detailed in Table 4.

TABLE 4: HSE HAZARDS and CONTROL MEASURES

| Activity | Hazard | Control |
|---|---|---|
| Set up on site | Interaction with other site users | Sign onto site register |
| | | Demarcate work area, exclusion zone |
| Drilling | Noise | Hearing protection |
| | Interaction with rig/excavator | Exclusion zone |
| | | Communicate with operators |
| Excavation | Dust | Air fibre monitoring |
| | | Dust masks |
| | Open excavations | Fence site |
| | | Backfill as soon as practicable |

| | | |
|---|---|---|
| | Interaction with rig/excavator | Exclusion zone |
| | | Communicate with operators |
| Sampling | Sharp/abrasive fill | Neoprene gloves |
| | Contaminated fill/groundwater | Nitrile gloves |
| Asbestos assessment | Airborne asbestos fibres | Suit and mask |

### 6.2 Personal Protective Equipment

Personal Protective Equipment (PPE) for the site will include:

- Hard hat;
- Safety glasses;
- Hi-visibility workwear;
- Long sleeves and trousers;
- Steel-capped boots;
- Chemical resistant rubber gloves (for persons coming in contact with soil/groundwater); and
- Dust resistant disposable overalls and P1 (minimum) dust masks (when handling potentially asbestos contaminated soil).

## 7 ANALYSIS PLAN

Groundwater samples will be analysed for the analytes listed in Table 3 above.

Primary and intra laboratory duplicate samples will be analysed by SGS Australia (SGS), Sydney. Laboratory analysis will be in accordance with the requirements of the NEPM (Schedule B3) and will be referenced to USEPA or APHA methods. Laboratory analytical methods are summarised in Table 5. Inter laboratory duplicate samples will be analysed by ALS Environmental (ALS) Sydney Laboratory. SGS and ALS are NATA accredited for the analysis to be undertaken.

TABLE 5: SUMMARY OF ANALYTICAL METHOD REFERENCES

| Analysis | Medium | SGS Reference |
|---|---|---|
| TRH | Water | USEPA 5030B, 8020A, 8260, 3510B and 8015B |
| PAH | Water | USEPA 3500C and 8270D |
| Metals | Water | USEPA 6020A |
| Mercury | Water | APHA 3112 and 3500 |
| VOC | Water | USEPA 5021A/8260 P&T/HS/GC/MS |
| PFAS | Water | In house LC-MS/MS |
| Fluoride | Water | APHA 4110 B |

## 8 QUALITY ASSURANCE/QUALITY CONTROL PLAN

The QA/QC plan is designed to achieve predetermined DQIs that will demonstrate accuracy, precision, comparability, representativeness and completeness of the data generated.

### 8.1 Data Quality Indicators for the Project

DQIs for the project will be based on field and laboratory considerations in the table in Appendix V of the NSW Department of Environment and Conservation (DEC) Guidelines for the NSW Site Auditor Scheme (2nd Edition) Contaminated Sites. Specific DQIs for field and laboratory QA/QC samples are shown in Table 6.

TABLE 6: DATA QUALITY INDICATORS

| Type of Quality Control Sample | Control Limit |
|---|---|
| Duplicate Samples | RPDs within 50% for analyte concentrations greater than 5 x LOR. |
| Rinsate Samples | Analytes not detected at concentrations greater than the blank water. |
| Laboratory Spikes | Laboratory spike acceptance limits are a "live" range and updated regularly. The laboratory acceptance limits at the time of analysis will be used. |
| Laboratory Blanks | Analytes not detected. |

A review of the DQIs will be undertaken to assess the usability and representative nature of data generated from the project. The outcome of the DQI assessment will either:

- Recommend the data is suitable to be used for the project; or
- Limit the suitability of the data to be used, or
- Recommend further contamination/validation sampling.

### 8.2 Sampling Protocols

The following sampling protocols will be observed during the project:

- Dedicated sampling equipment (including the silicon tubing in the peristaltic pump) will be used for groundwater sample collection and will be changed between each sampling location.
- HDPE tubing will be used for groundwater sampling as it considered to present a lower risk of PFAS contamination of the samples.
- Groundwater samples will be collected in appropriate laboratory-supplied vessels;
- Samples will be placed on ice awaiting dispatch to the laboratory;
- Samples will be dispatched to the laboratory under chain of custody (CoC) conditions. CoC documentation will include:
    - sample identification of each sample;
    - date sampled; and
    - date dispatched to the laboratory; and
- Samples will be dispatched within three days of collection, to avoid holding time exceedances.

### 8.3 Field Quality Control Samples

The following quality control samples will be collected in the field:

- Intra and inter-laboratory duplicates will be collected at the rate of 1 per 20 primary samples collected; and
- A rinsate sample will be collected on every day that non-dedicated or non-disposable sampling equipment is utilised. Rinsate water will be deionised water purchased from a hardware store.
- Site tap water will be used for PFAS rinsate. The rinsate water will be tested before and after it is used.

### 8.4 Laboratory Quality Control

Laboratory quality control protocols will include the following:

- Laboratory analysis of samples will be undertaken by a NATA-accredited environmental testing laboratory;
- The laboratory will implement a quality control plan conforming to the NEPM Schedule B3 Guidelines for Analysis of Potentially Contaminated Soils;

- The laboratory will analyse reagent blanks, spike samples, duplicate spikes, matrix spikes, and surrogate spikes and duplicates to assess the laboratory's quality control; and
- The laboratory will extract and/or analyse the samples within the required holding times.

# 9 POST-ASSESSMENT ACTION PLAN

## 9.1 Data Assessment

Field observations, particularly those related to depths of groundwater and fill, will be used to revise the CSM as described in Section 2.

Analytical results will be compared with assessment and validation criteria as outlined in Section 4.3.1.

## 9.2 Requirement for Groundwater Remediation

The consideration that the leaching of contamination from fill on the site to groundwater or on site migration of contaminated groundwater, and subsequent off-site movement of contamination via groundwater migration, does not represent a significant risk of environmental impact will be considered to be supported if:

- Analytes are not detected at concentrations above the laboratory limit of reporting, or above the trigger values listed in Section 4.3.2; OR
- Groundwater contamination is found to be consistent with samples collected from nearby locations in the same historic land use setting; OR
- The primary source of groundwater contamination has been removed or will be managed/remediated.

In this case, it will be considered that site contamination is not being transported off-site via groundwater migration, and that no groundwater-specific remediation is required.

If field observations and analytical results indicate that contamination is being transported off-site via groundwater migration, the CSM and RAP will be revised.

# 10 GROUNDWATER ASSESSMENT

## 10.1 Field Work

Three groundwater monitoring wells (MW7 – MW9) were installed on 6 April 2021 and one groundwater monitoring well, MW10, was installed on 3 June by the FICO group, under the guidance of a JME environmental scientist. The wells were installed as per the requirements of the SAQP.

Construction details of monitoring wells are represented graphically in Appendix A.

Groundwater monitoring wells were left for at least a week to allow them to settle and equilibrate.

Groundwater gauging and sample collection from MW7 – MW9, plus pre-existing monitoring wells MW4-MW6, was conducted by a JME environmental scientist on 13 April 2021. Monitoring wells were sampled in accordance with the SAQP.

Following sampling monitoring wells MW7 and MW 8, a typhoon pump was placed down each well to maintain a constant groundwater head. The extracted water was collected in pre-weighed buckets over an 8-10 period. The time was kept with an iPhone stopwatch. The water

in the buckets was weighed on a top load balance. The groundwater head was measured using an interface probe.

Groundwater gauging and sample collection from MW4 – MW10, was conducted by a JME environmental scientist on 11 June 2021. Monitoring wells were sampled in accordance with the SAQP.

Groundwater depths and field parameters are recorded in Tables 7 and 8 (below).

### 10.2 Laboratory Analysis

Primary and inter duplicate and intra laboratory groundwater samples were analysed by SGS Australia (SGS), Sydney. The chain of custody did not direct SGS to forward the inter laboratory duplicate to ALS. This error was not noticed until after the analysis had been completed.

Samples were analysed for:

- PFAS (samples collected 13/4/2021 and 11/6/2021);
- Fluoride (samples collected 13/4/2021);
- Metals (Al, As, Cd, Cr, Cu, Ni, Pb, Zn, Hg) (samples collected 13/4/2021 and 11/6/2021);
- Volatile organic compounds (VOC) (samples collected 13/4/2021);
- PAH (samples collected 13/4/2021); and
- TRH (samples collected 13/4/2021).

### 10.3 Quality Assurance and Quality Control

Groundwater monitoring wells were installed by drillers licensed to install such wells, and experienced JME field staff.

The interface probe and water quality meter were hired from AirMet who deemed the equipment suitable for PFAS sampling and calibrated prior to use. Calibration certificates are attached in Appendix B.

Dedicated sampling equipment (excluding the flow cell) was used for groundwater sample collection and changed between each sampling location. The flow cell was purged between each sampling location, and not used during sample collection.

Groundwater samples were collected in appropriate laboratory-supplied vessels, kept on ice during transport, and received by the laboratory at a temperature of 3.1°C for the samples collected 13/4/2021 and 5°C for the samples collected 11/6/2021. Samples were transported under CoC conditions and received by the laboratory with sufficient time to undertake analyses within specified holding times.

During the assessment, field duplicate (QC1) and triplicate (QC1A) groundwater samples were collected and analysed to assess whether field sampling procedures provided reproducible results. The relative percentage difference (RPD) of analyte concentrations between duplicates and their primary sample were calculated to be within the acceptance criterion of 50% for concentrations greater than 5x the laboratory limit of reporting.

RPD results are included in Summary Table 3 (attached).

An equipment blank sample was not collected on 13/4/2021. A PFAS equipment rinsate was collected on 11/6/2021. Tap water was collected from site in a plastic bucket. A sample of the water was collected from the bucket (QCC). After sampling monitoring well MW9, the sampling train was placed in the bucket and the peristaltic pump was engaged. The sampling train was

flushed for two minutes. A rinsate sample (QCD) was collected form the peristaltic pump (See Plate 1). A number of PFAS substances were detected in both QCC and QCD at practically identical low concentrations. Hence it is considered unlikely that PFOA or PFOS were introduced by the sampling train. The source of these PFAS compounds was unknown.

It was assumed the water supplied from the onsite tap was from the Hunter Water reticulated water supply. Hunter Water routinely test the water supply for PFOA and PFOS+PFHxS. Typically, Hunter Water report the monthly average concentrations of PFOA as <0.002µg/L and PFOS+PFHxS as <0.004µg/L in the Grahamstown Zone. The monthly average for PFOS+PHxF in January 2021 was 0.004µg/L and the highest individual PFOS+PFHxS concentration was 0.005 from May 2020- May 2021. Hunter Waters reporting limit is higher than reporting supplied by the laboratory used in this assessment and Hunter Water do not report on the presence/absence of other PFAS compounds observed in samples QCC and QCD. The tap water being the source of the PFAS compounds observed in QCC and QCD. cannot be ruled out.

The monitoring wells were sampled using identical and dedicated HDPE tubing. The monitoring wells were sampled in the following order, MW7, MW8, MW6, MW9, MW10, MW5 and MW4. The two wells with the lowest PFAS concentrations were sampled in the middle of the sampling run indicating that cross contamination between sampling locations caused by the sampling method is unlikely.



Plate 1: Collecting rinsate sample QCD from monitoring well MW9 sampling train.

Groundwater quality assurance/quality control (QA/QC) results are presented in Summary Table 3 (attached).

SGS is National Association of Testing Authorities (NATA)-accredited for the analyses requested. SGS conducted internal quality control using spikes, laboratory duplicates and method blanks.

A review of SGS's Data Quality Objective (DQOs) for the analysis of soil samples indicated that DQOs were met, with the following exceptions:

- for samples collected 13/04/2021:
  - Surrogate analysis for PFAS in Aqueous Samples - Low Level for two items; and
  - Surrogate analysis for PAH in Water for two items.
- For samples collected 11/06/2021:
  - "Some surrogate recovery is outside of the acceptance criteria due to sample matrix interference".

It should be noted that the surrogate recovery for the PFAS compounds of interest were within Laboratory QA/QC documentation is included in Appendix C.

Based on a review of QA/QC results it is considered that analytical results are indicative of the contamination status of the site at the time of sampling.

## 10.4 Results

### 10.4.1 Field Observations

Groundwater field measurements are listed in Table 7 and Table 8, and borehole logs are included in Appendix A. Note Monitoring wells MW4, MW5 and MW6 were installed in 2012 by the same drilling company and environmental scientist, using the same method, who installed monitoring wells MW7-MW10.

TABLE 7: MONITORING WELL GROUNDWATER PROPERTIES 13 April 2021

| Well | Top of Case Elevation (mAHD) | Groundwater Depth (mbTOC) | Calculated Groundwater Elevation (mAHD) | Dissolved Oxygen (ppm) | Electrical Conductivity (µS/cm) | pH | Redox Potential (mV) | Temperature (°C) |
|---|---|---|---|---|---|---|---|---|
| MW4 | 5.07 | 1.534 | 3.536 | 0.25 | 630 | 6.45 | -149 | 23.5 |
| MW5 | 5.19 | 1.636 | 3.554 | 0.98 | 617 | 6.78 | -180 | 22.3 |
| MW6 | 7.05 | 2.667 | 4.383 | 8.73 | 94.4 | 5.15 | -118 | 20.9 |
| MW7 | 6.04 | 2.199 | 3.841 | 2.02 | 244 | 5.96 | -148 | 22.6 |
| MW8 | 6.13 | 2.241 | 3.889 | 2.16 | 224 | 5.67 | -150 | 22.5 |
| MW9 | 7.22 | 2.904 | 4.316 | 2.45 | 200 | 5.73 | -148 | 22.8 |

TABLE 8: MONITORING WELL GROUNDWATER PROPERTIES 11 June 2021

| Well | Top of Case Elevation (mAHD) | Groundwater Depth (mbTOC) | Calculated Groundwater Elevation (mAHD) | Dissolved Oxygen (ppm) | Electrical Conductivity (µS/cm) | pH | Redox Potential (mV) | Temperature (°C) |
|---|---|---|---|---|---|---|---|---|
| MW4 | 5.07 | 1.882 | 3.188 | 0.16 | 360 | 6.32 | -24.9 | 21.4 |
| MW5 | 5.19 | 1.920 | 3.270 | 0.60 | 271 | 6.11 | 45.8 | 19.9 |
| MW6 | 7.05 | 3.055 | 3.995 | 7.40 | 96.6 | 5.04 | 165.2 | 18.9 |
| MW7 | 6.04 | 2.542 | 3.498 | 0.17 | 179 | 5.78 | 16.1 | 20.4 |
| MW8 | 6.13 | 2.584 | 3.546 | 1.56 | 149.6 | 6.01 | 123 | 19.6 |
| MW9 | 7.22 | 3.205 | 4.015 | 2.87 | 165.9 | 5.17 | 106 | 22.8 |
| MW10 | - | 1.786 | - | 1.37 | 242 | 6.02 | -44.2 | 19.5 |

The total depth of monitoring wells MW4 (4.223 mbTOC), MW5 (4mbTOC) and MW6 (5.1 mbTOC) were measured on 11/6/2021 indicating these wells have not silted up over time.

### 10.4.2 Groundwater Flow Direction Groundwater Gradient and Infiltration Rate

The tops of the casing of groundwater wells MW4 -MW9 were surveyed by registered surveyors DeWitt Consulting Pty Ltd. The survey results were combined with the depth to groundwater results obtained by JME to assess the altitude of the groundwater at each groundwater well location. Groundwater contours were generated using Surfer 13™. The groundwater contours indicate that the groundwater flows in a south south east direction. The groundwater contours are shown in Figure 3.

The groundwater gradient was estimated using the collected data for monitoring wells MW4 and MW9. Monitoring wells MW4 and MW9 are approximately 312m apart and the difference in the groundwater elevation is approximately 0.76m. Therefore, the hydraulic gradient is approximately 0.0024.

During the constant head test in monitoring well MW7, 64 kg (L) of water was collected in a ten-minute (600 second) period whilst maintaining a well head 0.112m below the standing groundwater level. Hence the inflow rate was 0.107 L/s

The slotted well casing in MW7 was set approximately 2.3m below the standing ground water level. The borehole annulus had a radius of 0.1m. Hence the area of the borehole annulus was 1.45$m^2$. Hence the flow rate of the aquifer at MW7 was approximately 0.074 L/s/$m^2$ or 7.4x$10^{-5}$ m/s or 6.4 m/da.

During the constant head test in monitoring well MW8, 65 kg (L) of water was collected in an eight-minute (480 second) period whilst maintaining a well head 0.121m below the standing groundwater level. Hence the inflow rate was 0.135 L/s.

The slotted well casing in MW8 was set approximately 2.26m below the standing ground water level. The borehole annulus had a radius of 0.1m. Hence the area of the borehole annulus was 1.42$m^2$. Hence the flow rate of the aquifer at MW8 was approximately 0.095 L/s/$m^2$ or 9.5x$10^{-5}$ m/s or 8.2 m/day.

The groundwater velocity can be calculated using the formula:

$$V=Kl/n$$

Where V is the groundwater velocity;
K is approximated by the aquifer flow rates derived from the field pump tests;
l is the hydraulic gradient calculated from field measurements; and
n is the effective porosity (or specific yield) which is typically 0.22 for sand.

Hence the groundwater velocity is estimated to be around 0.07- 0.09 m/day. Based on this estimate it would take approximately 13-17 years for the site groundwater to reach the nearest domestic groundwater well and 33-43 years for the site groundwater to reach the Hunter River.

### 10.4.3 Laboratory Analysis

Laboratory results from groundwater monitoring wells were compared with adopted DGVs (as developed in the SAQP). The comparison is summarised in Summary Table 2 (attached). Note that PFAS results were only tabulated if the analyte was detected above the laboratory LOR.

BTEX, TRH and PAH were not detected at concentrations above the laboratory LOR.

CHCs were not detected at concentrations above the laboratory LOR, with the exception of chloroform, which was detected in sample MW5 at a concentration significantly below the adopted DGV.

Several PFAS compounds were detected in the six samples collected on the 13/4/2021 and the seven samples collected on 11/6/2021. The PFAS fingerprint in the samples collected from MW4, MW5, MW7 and MW8 appeared similar in the makeup of compounds and their concentrations. PFOS was detected at concentrations above the NEMP2.0 99% ecological protection value for both monitoring rounds in monitoring wells MW4, MW5, MW7 and MW8 and in monitoring wells MW9 and MW10 in the second monitoring round. The sum of PFOS and PHxS exceeded the adopted DGV in MW4 in the second monitoring round. PFOA was detected at concentrations below the adopted DGV in in monitoring wells MW4, MW5, MW7 and MW8. PFOA was not detected above the laboratory limit of report in monitoring wells MW6 and MW9.

Fluoride was detected below the adopted DGV in monitoring wells MW4, MW5, MW6, and MW9.

Arsenic, cadmium, nickel, lead and mercury were either not detected at concentrations above the laboratory LOR or detected in some wells above the laboratory detection limit but below the adopted DGVs.

The following metals were detected in some samples at concentrations which exceeded adopted guideline values:

- Aluminium was detected at concentrations significantly greater than the adopted DGV in the each of the monitoring wells sampled;
- Copper was detected in monitoring wells MW4, MW5 and MW7 in the first monitoring round;
- Chromium was detected in MW6 in both monitoring rounds; and
- Zinc was detected in monitoring wells MW4, MW7 and MW8 in the first monitoring round only and monitoring well MW5 in both monitoring wells.

Laboratory analytical reports are presented in Appendix C.

# 11 DISCUSSION

The site is situated in Tomago with the topography slow downward from north northwest to a south southeast. The groundwater flows in a similar direction.

The site has had a two main industrial land use including sand mining and metal fabrication (steel and aluminium). A soil contamination assessment by JME indicated the site soil in the eastern portion of site was impacted with arsenic, copper, cadmium, lead and zinc. Lead exceeded the human health criteria whilst the remaining metals exceeded the ecological criteria. The RAP prepared by JME recommended the excavation and removal of the significant lead impacted areas with capping and stormwater management to mitigate potential offsite ecological impacts of arsenic, copper, cadmium and zinc.

The groundwater monitoring undertaken on 13 April 2021 was undertaken after a significant rainfall event in March 2021 where 459mm of rainfall was recorded at the Williamtown Base and another 40mm of rainfall was recorded on 8 April 2021. By comparison, 46.8mm of rainfall was recorded in the thirty days preceding the groundwater monitoring event on 11 June 2021. The difference in rainfall preceding the monitoring events had an expected effect on the groundwater depth which was higher on the 13 April across the wells monitored. Similarly with the historical electrical conductivity data displayed in Graphs 1-3, the electrical

conductivity of the two upgradient wells, MW6 and MW9, were relatively stable when compared to the remaining wells.

Groundwater monitoring indicated that the impact of arsenic, cadmium and copper in soil on the groundwater is negligible across both sampling rounds with the lower concentrations being observed in the second monitoring round. Cadmium has not exceeded the DGV in the samples in the recent monitoring rounds. Copper concentrations were slightly above the DGV in the first round, with no exceedances in the second monitoring round. Chromium slightly exceeded the DGV in both monitoring rounds. There were no exceedances of lead in either sampling rounds in the monitoring wells sampled.

Zinc was significantly elevated at MW7 with a concentration of 89 µg/L compared to trigger value of 15 µg/L in the first monitoring round and less than the trigger value with a concentration of 5µg/L in the second monitoring round. Monitoring well MW7 was in the vicinity, but down hydraulic gradient of, the highest soil zinc impacts reported in JME20005-2. It appears that the form of zinc present in the soil is more labile than the forms of the other metals that have impacted the soils in the vicinity of MW7. The difference in the zinc concentrations in the two monitoring rounds was likely to be caused by the 10-fold difference in rainfall in the thirty days leading up to the monitoring events. The highest zinc groundwater concentration, 220µg/L was detected in monitoring well MW10, located in Lot 11. It was reasonably assumed that a significant proportion of the surface soils were removed from Lot 11 and on this basis is expected that the zinc in this area would self attenuate.

The highest zinc soil impacts are associated with the highest lead soil impacts and, as such, are planned to be removed from the site or placed under a cap in the remediation process.

PFOA detections were significantly lower than the adopted human health trigger values and the NEMP2.0 99% ecological protection value. The PFOS+PFHxS concentration exceeded the adopted human health trigger by 20% in monitoring well MW4 in the second monitoring event and was below it the first monitoring event. The PFOS+PFHxS concentrations were below the adopted human health trigger in the remaining wells across both monitoring events. The concentration PFOS was detected in the downgradient wells were almost 30 times greater than the NEMP2.0 99% ecological protection value. Although the concentrations in the wells nearer to the Varley site are slightly higher and gradually diminish across the site, the concentrations of PFOS are similar enough in the PFAS impacted wells to consider its presence is unlikely to be caused by onsite migration from the neighbouring site. Therefore, it is considered possible that PFAS was either previously used on site or a significant (bush) fire threatened the site. Either way, the primary source has been removed from site and no significant PFAS soil concentrations (secondary source) were reported in JME2005-2, thus groundwater concentrations of PFAS should naturally attenuate with time. No PFOS was detected in the upgradient wells, MW6 and MW9.

It is difficult to assign trends in concentrations from 2 rounds of monitoring and its recommended that additional rounds of monitoring are undertaken to provide a better understanding of the background values. This will assist the assessment the remediation effort required to minimise the impact on offsite receptors in a sustainable fashion.

The site is within the TAC buffer zone. The TAC buffer zone is a special environment management zone and is define in the TAC conditions of consent and is derived from the ambient fluoride levels associated with TAC operations. Fluoride and aluminium concentrations were largest in the upgradient wells and appeared to diminish the further away from TAC the groundwater well was located. Aluminium concentrations were 160 times greater than the adopted trigger value in monitoring well MW9 and 129 greater in monitoring well

MW6. On this basis, aluminium is considered to be highest ecological risk to down gradient receptors.

No further action is required for fluoride and aluminium because these will continue to migrate onto site whilst the TAC smelter is still operable. The concentration of fluoride does exceed the drinking water guidelines in some wells and therefore the drinking of groundwater should be strictly prohibited on site.

# 12 CONCLUSION

JME considers that the elevated arsenic, cadmium, copper, lead and zinc concentrations in soil had not had a significant impact on the site's groundwater. It was noted that zinc was significantly elevated in a monitoring well, MW7, near the sites boundary following a significant rainfall event and was below the DGV in the second monitoring event. The zinc impacted soils with the highest concentrations are associated with the lead impacted soils that are planned to be removed along with the placement of a cap over a portion of site. The cap, in conjunction with a storm water system was intended to reduce stormwater percolation through the soil thereby reducing the metal leaching potential. PFAS concentrations were considered not to be risk to human health and would attenuate as there were no continuing sources.

On this basis, it considered that groundwater specific remediation is not required.

# 13 REFERENCES

Australian and New Zealand Water Quality Guideline website

JME20005-2 Detailed Contamination Assessment 21D and 21F School Drive Tomago, JM Environments, June 2020

JME20005-3 Remedial Action Plan 21D and 21F School Drive Tomago revision 1,June 2020.

National Environment Protection (Assessment of Site Contamination) Measure (1999, updated 2013) Schedule B1, Guideline on Investigation Levels for Soil and Groundwater

National Environment Protection (Assessment of Site Contamination) Measure (1999, updated 2013) Schedule B2, Guideline on Site Characterisation

National Environment Protection (Assessment of Site Contamination) Measure (1999, updated 2013) 1999 Errata Updated 30 April 2014

NSW EPA (2017) Guidelines for the NSW Site Auditor Scheme (3rd Edition) Contaminated Sites

NSW Department of Environment and Conservation NSW (2007) Guidelines for the Assessment and Management of Groundwater Contamination

NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Sites

Google Earth

PFAS National Environmental Management Plan January 2018, Heads of EPAs Australia and New Zealand

maps.six.gov.nsw.au

# 14 LIMITATIONS

It is the nature of contaminated site investigations that the degree of variability in site conditions cannot be known completely, and no sampling and analysis program can eliminate all uncertainty concerning the condition of the site. Professional judgement must be exercised in the collection and interpretation of data.

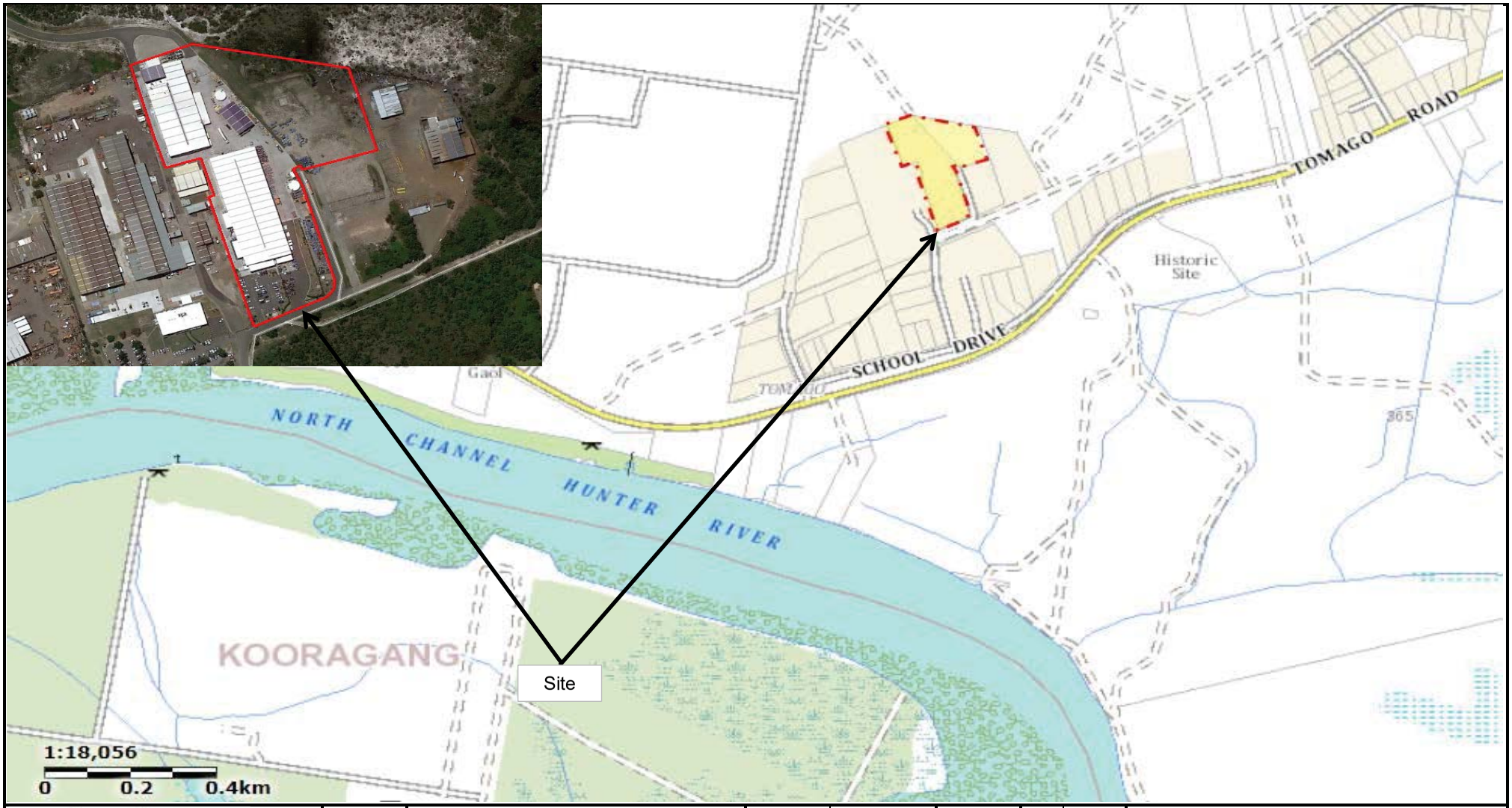
In preparing this report, current guidelines for assessment and management of contaminated land were followed. This work has been conducted in good faith, in accordance with JME's understanding of the client's brief, and general accepted practice for environmental consulting.

This report was prepared for Remondis Australia Pty Ltd, with the objective of refining the understanding of contamination on the site that could potentially impact on the development of the property for use as apartments. No warranty, expressed or implied, is made as to the information and professional advice included in this report. This report is not intended for other parties or other uses, except for the purpose of assessing a Development Application for the site. Anyone using this document does so at their own risk, and should satisfy themselves concerning its applicability and, where necessary, should seek expert advice in relation to the particular situation at the time.

This report is only applicable for the site's proposed redevelopment. If the proposed redevelopment is altered, the report may have to be altered accordingly.

This report does not comprise a geotechnical assessment and should not be used for geotechnical purposes.

# Figures




ENVIRONMENTS

CLIENT: **Remondis**

PROJECT TITLE: **School Drive, Tomago**

| | | | | |
|---|---|---|---|---|
| PROJECT: | JME20005 | DESIGNED: | JMc | |
| DWG #: | 1 | DRAWN: | JH | |
| REVISION: | 1 | STATUS: | NFC | |
| SCALE: | As shown | | | |
| DATE: | 1/06/2020 | | | |

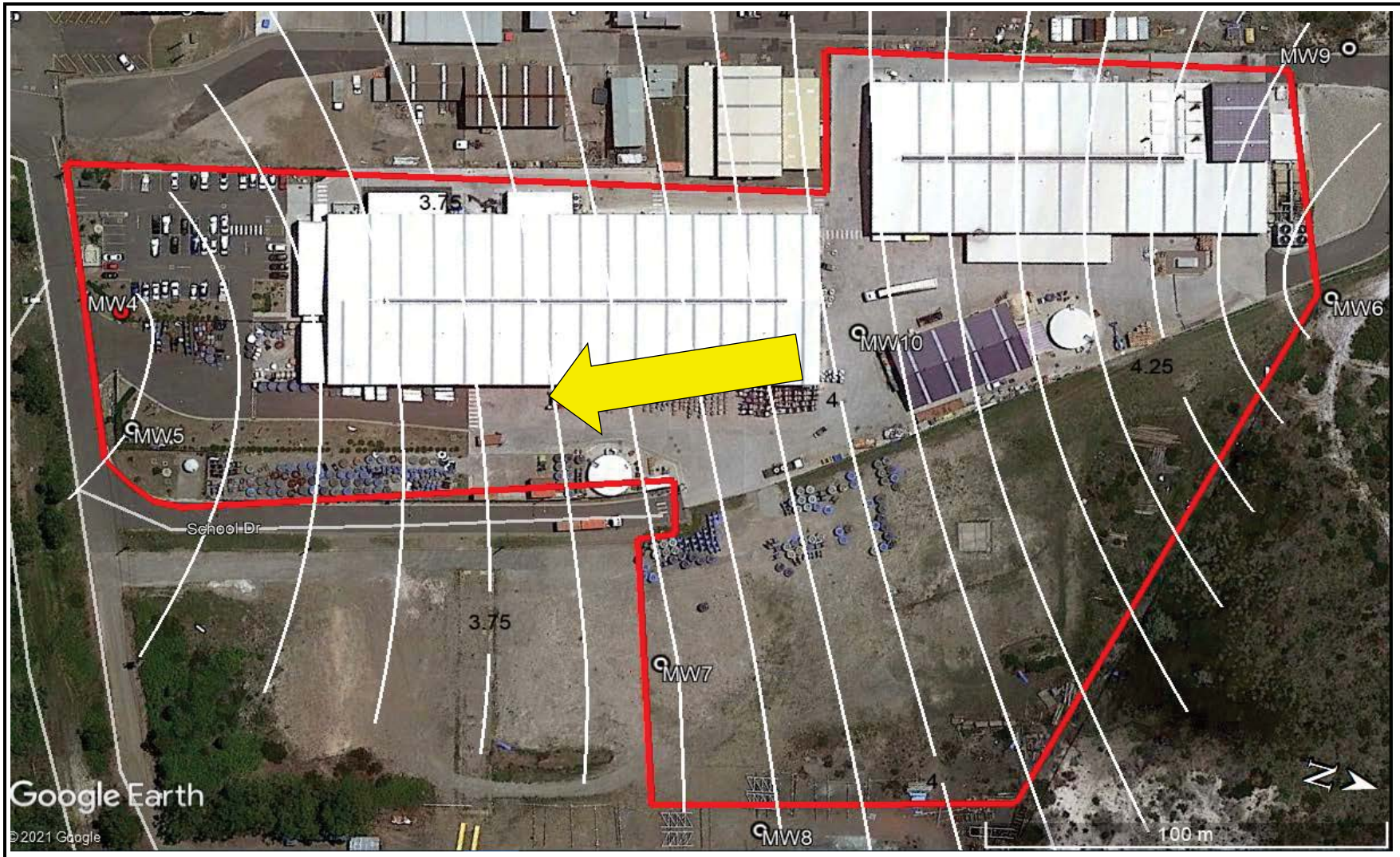
FIGURE TITLE: **Site Location Plan**

FIGURE NUMBER: **1**




ENVIRONMENTS

| | | | | | | |
|---|---|---|---|---|---|---|
| CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | | FIGURE TITLE: |
| | DWG #: | 1 | DRAWN: | JMc | | **Monitoring Well Locations** |
| | REVISION: | 1 | | | | |
| PROJECT TITLE: **School Drive, Tomago** | SCALE: | NTS | STATUS: | NFC | | |
| | DATE: | 1/06/2021 | | | | FIGURE NUMBER: **2** |




Inferred groundwater flow direction

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ENVIRONMENTS | | CLIENT: **Remondis** | PROJECT: | JME20005 | DESIGNED: | JMc | FIGURE TITLE: |
| | | | DWG #: | 1 | DRAWN: | JMc | **Groundwater Contours** |
| | | | REVISION: | 1 | | | |
| | | PROJECT TITLE: **School Drive, Tomago** | SCALE: | NTS | STATUS: | NFC | |
| | | | DATE: | 28/04/2021 | | | FIGURE NUMBER: **3** |

# Summary Tables

Summary Table 1

| | TRH C6-C9 | TRH C10-C36 | Cl | SO4 | NO3-N | Alkalinity | $NH_3$ as N | $NO_2$ as N | TKN | TN | TP | Ca | Mg | Na |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L |
| | Monitoring Well MW4 | | | | | | | | | | | | | |
| Min | <40 | <450 | 15 | 20 | 0 | 10 | 0.035 | 0.007 | 0.62 | 0.62 | 0.03 | 0.6 | 1 | 21 |
| Max | <40 | <450 | 110 | 220 | 23 | 170 | 0.53 | 0.086 | 2.9 | 26 | 0.2 | 18 | 29 | 110 |
| Mean | <40 | <450 | 34 | 87 | 5 | 51 | 0.15 | 0.02 | 2 | 7 | 0.08 | 5 | 9 | 63 |
| | Monitoring Well MW5 | | | | | | | | | | | | | |
| Min | <40 | <450 | 13 | 20 | 0 | 35 | 0.038 | 0.005 | 0.62 | 0.7 | 0.01 | 15 | 3.8 | 13 |
| Max | <40 | <450 | 82 | 110 | 19 | 240 | 12 | 0.27 | 13 | 23 | 0.24 | 68 | 29 | 89 |
| Mean | <40 | <450 | 38.5 | 66.5 | 5 | 102 | 2 | 0 | 4 | 8.916 | 0 | 32 | 14 | 52 |
| | Monitoring Well MW6 | | | | | | | | | | | | | |
| Min | <40 | <450 | 10 | 14 | 0.55 | <5 | <0.005 | <0.005 | <0.05 | 0.67 | <0.02 | 0.5 | 0.6 | 7.8 |
| Max | <40 | <450 | 13 | 21 | 2.6 | 7 | 0.14 | 0.007 | 1.3 | 2.8 | 0.22 | 1.2 | 1.1 | 11 |
| Mean | <40 | <450 | 11 | 17 | 1.3 | <5 | 0.03 | <0.005 | 0.3 | 1.6 | 0.08 | 0.8 | 0.7 | 9 |

| | K | Al | As | Cd | Cr | Cu | Fe | Pb | Ni | Mn | Zn | Hg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L |
| | Monitoring Well MW4 | | | | | | | | | | | |
| Min | 1.5 | 91 | <1 | <0.1 | 3 | <1 | 75 | <1 | <1 | 8 | 34 | <0.1 |
| Max | 4.2 | 2300 | 2 | 0.3 | 8 | 5 | 1100 | <1 | 2 | 150 | 230 | <0.1 |
| Mean | 2.6 | 1191 | <1 | <0.1 | 4 | 2 | 323 | <1 | <1 | 56 | 72 | <0.1 |
| | Monitoring Well MW5 | | | | | | | | | | | |
| Min | 1.7 | 450 | <1 | <0.1 | 3 | 1 | 57 | <1 | <1 | 20 | 5 | <0.1 |
| Max | 5.5 | 2300 | 2 | 0.2 | 8 | 5 | 680 | 2 | 2 | 710 | 79 | <0.1 |
| Mean | 3.4 | 1102.5 | <1 | <0.1 | 5 | 3 | 157 | 1 | 1 | 228 | 42 | <0.1 |
| | Monitoring Well MW6 | | | | | | | | | | | |
| Min | 0.2 | 4300 | <1 | <0.1 | 2 | <1 | 5 | <1 | <1 | 6 | 5 | <0.1 |
| Max | 0.4 | 7800 | <1 | 0.4 | 5 | 3 | 390 | <1 | <1 | 21 | 11 | 0.2 |
| Mean | 0.3 | 5646 | <1 | <0.1 | 3 | 2 | 107 | <1 | <1 | 14 | 8 | <0.1 |

# Summary Table 2

| | | Adopted | NEMP | Description | MW4 | MW4 | MW5 | MW5 | MW6 | MW6 | MW7 | MW7 | MW8 | MW8 | MW9 | MW9 | MW10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Trigger | 99% | Sample Date | 13/4/2021 | 11/6/2021 | 13/4/2021 | 11/6/2021 | 13/4/2021 | 11/6/2021 | 13/4/2021 | 11/6/2021 | 13/4/2021 | 11/6/2021 | 13/4/2021 | 11/6/2021 | 11/6/2021 |
| | | Value | Ecological | Matrix | Water | Water | Water | Water | Water | Water | Water | Water | Water | Water | Water | Water | Water |
| **Analyte Name** | **Units** | | Protection | **Reporting Limit** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| Vinyl chloride (Chloroethene) | µg/L | 100 | | 0.3 | <0.3 | N.A. | <0.3 | N.A. | <0.3 | N.A. | <0.3 | N.A. | <0.3 | N.A. | <0.3 | N.A. | N.A. |
| 1,1-dichloroethene | µg/L | 700 | | 0.5 | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. |
| Chloroform (THM) | µg/L | 370 | | 0.5 | <0.5 | N.A. | **0.9** | N.A. | <0.5 | N.A. | **<0.5** | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. |
| 1,2-dichloroethane | µg/L | 1900 | | 0.5 | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. |
| 1,1,1-trichloroethane | µg/L | 270 | | 0.5 | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. |
| Benzene | µg/L | 500 | | 0.5 | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. |
| 1,2-dichloropropane | µg/L | 900 | | 0.5 | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. |
| Trichloroethene (Trichloroethylene,TCE) | µg/L | 330 | | 0.5 | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. |
| 1,1,2-trichloroethane | µg/L | 1900 | | 0.5 | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. |
| Toluene | µg/L | 180 | | 0.5 | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. |
| 1,3-dichloropropane | µg/L | 1100 | | 0.5 | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. |
| Tetrachloroethene (Perchloroethylene,PCE) | µg/L | 70 | | 0.5 | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. |
| m/p-xylene | µg/L | 75 | | 1 | <1 | N.A. | <1 | N.A. | <1 | N.A. | <1 | N.A. | <1 | N.A. | <1 | N.A. | N.A. |
| 1,1,2,2-tetrachloroethane | µg/L | 400 | | 0.5 | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. |
| o-xylene | µg/L | 350 | | 0.5 | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | <0.5 | N.A. | N.A. |
| Total VOC | µg/L | - | | 10 | <10 | N.A. | <10 | N.A. | <10 | N.A. | <10 | N.A. | <10 | N.A. | <10 | N.A. | N.A. |
| TRH C6-C10 (F1) | µg/L | 50 | | 50 | <50 | N.A. | <50 | N.A. | <50 | N.A. | <50 | N.A. | <50 | N.A. | <50 | N.A. | N.A. |
| TRH >C10-C16 (F2) | µg/L | 60 | | 60 | <60 | N.A. | <60 | N.A. | <60 | N.A. | <60 | N.A. | <60 | N.A. | <60 | N.A. | N.A. |
| TRH >C16-C34 (F3) | µg/L | 500 | | 500 | <500 | N.A. | <500 | N.A. | <500 | N.A. | <500 | N.A. | <500 | N.A. | <500 | N.A. | N.A. |
| TRH >C34-C40 (F4) | µg/L | 500 | | 500 | <500 | N.A. | <500 | N.A. | <500 | N.A. | <500 | N.A. | <500 | N.A. | <500 | N.A. | N.A. |
| Naphthalene | µg/L | 50 | | 0.1 | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | N.A. |
| Phenanthrene | µg/L | 0.6 | | 0.1 | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | N.A. |
| Anthracene | µg/L | 0.01 | | 0.1 | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | N.A. |
| Fluoranthene | µg/L | 1 | | 0.1 | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | N.A. |
| Benzo(a)pyrene | µg/L | 0.1 | | 0.1 | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | <0.1 | N.A. | N.A. |
| Fluortide | mg/L | 15 | | 0.1 | 4.6 | N.A. | 1.5 | N.A. | 8.7 | N.A. | <0.1 | N.A. | <0.1 | N.A. | 12 | N.A. | N.A. |
| Aluminium | µg/L | 55 | | 5 | **770** | N.A. | **270** | N.A. | **7100** | N.A. | **250** | N.A. | **190** | N.A. | **8800** | N.A. | N.A. |
| Arsenic, As | µg/L | 13 | | 1 | **2** | **1** | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Cadmium, Cd | µg/L | 0.7 | | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Copper, Cu | µg/L | 1.3 | | 1 | **3** | **1** | **3** | <1 | 1 | 1 | **3** | <1 | <1 | **1** | <1 | <1 | <1 |
| Chromium, Cr | µg/L | 4.4 | | 1 | **3** | **2** | **3** | **3** | **6** | **8** | **4** | **3** | **3** | **2** | **3** | **3** | **3** |
| Nickel, Ni | µg/L | 7 | | 1 | **2** | <1 | **2** | <1 | <1 | **<1** | **<1** | **<1** | <1 | **<1** | <1 | <1 | <1 |
| Lead, Pb | µg/L | 4.4 | | 1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Zinc, Zn | µg/L | 15 | | 5 | **34** | **12** | **33** | **17** | **6** | <5 | **89** | **5** | **18** | <5 | <5 | <5 | **220** |
| Mercury | mg/L | 0.0001 | | 0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Perfluorobutanoic acid (PFBA) | µg/L | - | - | 0.0005 | **0.020** | **0.035** | **0.022** | **0.007** | <0.0005 | <0.0005 | **0.0030** | **0.0014** | <0.0005 | **0.001** | <0.0005 | <0.0001 | **0.0097** |
| Perfluoropentanoic acid (PFPeA) | µg/L | - | - | 0.0005 | **0.0079** | **0.014** | **0.0055** | **0.003** | <0.0005 | <0.0005 | **0.0034** | **0.0025** | <0.0005 | <0.0005 | <0.0005 | 0.0006 | **0.0026** |
| Perfluorohexanoic acid (PFHxA) | µg/L | - | - | 0.0005 | **0.0095** | **0.016** | **0.0072** | **0.0065** | <0.0005 | **0.0005** | **0.0048** | **0.0022** | <0.0005 | **0.0007** | <0.0005 | <0.0005 | **0.0054** |
| Perfluoroheptanoic acid (PFHpA) | µg/L | - | - | 0.0005 | **0.0053** | **0.0081** | **0.0022** | **0.0044** | <0.0005 | **0.0006** | **0.0014** | **0.0011** | <0.0005 | **0.0005** | <0.0005 | <0.0005 | **0.0018** |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.56 | 19 | 0.0005 | **0.0067** | **0.016** | **0.0023** | **0.012** | <0.0005 | <0.0005 | **0.0052** | **0.0018** | **0.0031** | **0.010** | <0.0005 | <0.0005 | **0.018** |
| Perfluorobutane sulfonate (PFBS) | µg/L | - | - | 0.001 | **0.003** | **0.002** | **0.002** | **0.001** | <0.001 | <0.001 | **0.0010** | **0.003** | **0.002** | **0.001** | <0.001 | <0.001 | **0.001** |
| Perfluoropentane sulfonate (PFPeS) | µg/L | - | - | 0.001 | **0.003** | **0.002** | **0.002** | <0.001 | <0.001 | <0.001 | <0.001 | **0.001** | **0.002** | **<0.001** | <0.001 | <0.001 | **0.001** |
| Perfluorohexane sulfonate (PFHxS) | µg/L | - | - | 0.0002 | **0.028** | **0.068** | **0.015** | **0.027** | **0.0006** | <0.0002 | **0.0043** | **0.021** | **0.023** | **0.026** | **0.0003** | **0.0005** | **0.034** |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | - | - | 0.0002 | **0.0006** | **0.0003** | <0.0002 | <0.0002 | <0.0002 | <0.0002 | 0.0002 | <0.0002 | **0.0004** | <0.0002 | <0.0002 | <0.0002 | **0.0008** |
| Perfluorooctane sulfonate (PFOS) | µg/L | | 0.00023 | 0.0002 | **0.0063** | **0.016** | **0.0057** | **0.0071** | <0.0002 | <0.0002 | **0.0043** | **0.0081** | **0.0040** | **0.011** | <0.0002 | **0.0007** | **0.026** |
| Sum of PFHxS and PFOS | µg/L | 0.07 | | | **0.0343** | **0.084** | **0.0207** | **0.0341** | **0.0006** | <0.0002 | **0.0086** | **0.0291** | **0.0270** | **0.037** | **0.0003** | **0.0012** | **0.06** |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | | | 0.0005 | <0.0005 | <0.0005 | **0.0050** | <0.0005 | <0.0005 | <0.0005 | **<0.0005** | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |

excceeds NEMP 2.0 Ecological DGV
exceeds adopted DGV by <250%
exceeds adopted DGV by >250%

ENVIRONMENTS

# Summary Table 3

| | | Description | MW4 | QC2 | Relative | QC2A | Relative | MW7 | QC1 | Relative | QC1A | Relative | QCC | QCD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample Date | 11/6/2021 | 11/6/2021 | percentage | 11/6/2021 | percentage | 13/4/2021 | 13/4/2021 | percentage | 13/4/2021 | percentage | 11/6/2021 | 11/6/2021 |
| | | Matrix | Water | Water | difference | Water | difference | Water | Water | difference | Water | difference | Water | Water |
| **Analyte Name** | **Units** | **Reporting Limit** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| Vinyl chloride (Chloroethene) | µg/L | 0.3 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.3 | <0.3 | 0% | <0.3 | 0% | N.A. | N.A. |
| 1,1-dichloroethene | µg/L | 0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | <0.5 | 0% | <0.5 | 0% | N.A. | N.A. |
| Chloroform (THM) | µg/L | 0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | <0.5 | 0% | <0.5 | 0% | N.A. | N.A. |
| 1,2-dichloroethane | µg/L | 0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | <0.5 | 0% | <0.5 | 0% | N.A. | N.A. |
| 1,1,1-trichloroethane | µg/L | 0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | <0.5 | 0% | <0.5 | 0% | N.A. | N.A. |
| Benzene | µg/L | 0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | <0.5 | 0% | <0.5 | 0% | N.A. | N.A. |
| 1,2-dichloropropane | µg/L | 0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | <0.5 | 0% | <0.5 | 0% | N.A. | N.A. |
| Trichloroethene (Trichloroethylene,TCE) | µg/L | 0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | <0.5 | 0% | <0.5 | 0% | N.A. | N.A. |
| 1,1,2-trichloroethane | µg/L | 0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | <0.5 | 0% | <0.5 | 0% | N.A. | N.A. |
| Toluene | µg/L | 0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | <0.5 | 0% | <0.5 | 0% | N.A. | N.A. |
| 1,3-dichloropropane | µg/L | 0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | <0.5 | 0% | <0.5 | 0% | N.A. | N.A. |
| Tetrachloroethene (Perchloroethylene,PCE) | µg/L | 0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | <0.5 | 0% | <0.5 | 0% | N.A. | N.A. |
| m/p-xylene | µg/L | 1 | N.A. | N.A. | N.A. | N.A. | N.A. | <1 | <1 | 0% | <1 | 0% | N.A. | N.A. |
| 1,1,2,2-tetrachloroethane | µg/L | 0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | <0.5 | 0% | <0.5 | 0% | N.A. | N.A. |
| o-xylene | µg/L | 0.5 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.5 | <0.5 | 0% | <0.5 | 0% | N.A. | N.A. |
| Total VOC | µg/L | 10 | N.A. | N.A. | N.A. | N.A. | N.A. | <10 | <10 | 0% | <10 | 0% | N.A. | N.A. |
| TRH C6-C10 (F1) | µg/L | 50 | N.A. | N.A. | N.A. | N.A. | N.A. | <50 | <50 | 0% | <50 | 0% | N.A. | N.A. |
| TRH >C10-C16 (F2) | µg/L | 60 | N.A. | N.A. | N.A. | N.A. | N.A. | <60 | <60 | 0% | <60 | 0% | N.A. | N.A. |
| TRH >C16-C34 (F3) | µg/L | 500 | N.A. | N.A. | N.A. | N.A. | N.A. | <500 | <500 | 0% | <500 | 0% | N.A. | N.A. |
| TRH >C34-C40 (F4) | µg/L | 500 | N.A. | N.A. | N.A. | N.A. | N.A. | <500 | <500 | 0% | <500 | 0% | N.A. | N.A. |
| Naphthalene | µg/L | 0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | <0.1 | 0% | <0.1 | 0% | N.A. | N.A. |
| Phenanthrene | µg/L | 0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | <0.1 | 0% | <0.1 | 0% | N.A. | N.A. |
| Anthracene | µg/L | 0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | <0.1 | 0% | <0.1 | 0% | N.A. | N.A. |
| Fluoranthene | µg/L | 0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | <0.1 | 0% | <0.1 | 0% | N.A. | N.A. |
| Benzo(a)pyrene | µg/L | 0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | <0.1 | 0% | <0.1 | 0% | N.A. | N.A. |
| Fluortide | mg/L | 0.1 | N.A. | N.A. | N.A. | N.A. | N.A. | <0.1 | <0.1 | 0% | 0.15 | 40% | N.A. | N.A. |
| Aluminium | µg/L | 5 | N.A. | N.A. | N.A. | N.A. | N.A. | **250** | **260** | 4% | **240** | 4% | N.A. | N.A. |
| Arsenic, As | µg/L | 1 | **1** | N.A. | N.A. | <1 | 0% | <1 | <1 | 0% | <1 | 0% | N.A. | N.A. |
| Cadmium, Cd | µg/L | 0.1 | <0.1 | N.A. | N.A. | <0.1 | 0% | <0.1 | <0.1 | 0% | <0.1 | 0% | N.A. | N.A. |
| Copper, Cu | µg/L | 1 | **1** | N.A. | N.A. | <1 | 0% | **3** | **2** | 40% | <1 | 100% | N.A. | N.A. |
| Chromium, Cr | µg/L | 1 | **2** | N.A. | N.A. | **2** | 0% | **4** | **4** | 0% | **4** | 0% | N.A. | N.A. |
| Nickel, Ni | µg/L | 1 | <1 | N.A. | N.A. | <1 | 0% | <1 | <1 | 0% | <1 | 0% | N.A. | N.A. |
| Lead, Pb | µg/L | 1 | <1 | N.A. | N.A. | <1 | 0% | <1 | <1 | 0% | <1 | 0% | N.A. | N.A. |
| Zinc, Zn | µg/L | 5 | **12** | N.A. | N.A. | **7** | 53% | **89** | **83** | 7% | **77** | 14% | N.A. | N.A. |
| Mercury | mg/L | 0.0001 | <0.0001 | N.A. | N.A. | <0.0001 | 0% | <0.0001 | <0.0001 | 0% | <0.0001 | 0% | N.A. | N.A. |
| Perfluorobutanoic acid (PFBA) | µg/L | 0.0005 | **0.035** | **0.033** | 6% | <0.1 | N.A. | **0.0030** | **0.0024** | 22% | **0.0021** | 35% | **0.0011** | **0.0013** |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.0005 | **0.014** | **0.013** | 7% | <0.02 | N.A. | **0.0034** | **0.0023** | 39% | **0.0021** | 47% | **0.0016** | **0.0016** |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.0005 | **0.016** | **0.014** | 13% | <0.02 | N.A. | **0.0048** | **0.0039** | 21% | **0.0036** | 29% | **0.001** | **0.001** |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.0005 | **0.0081** | **0.0086** | 6% | <0.02 | N.A. | **0.0014** | **0.0020** | 35% | **0.0015** | 7% | **0.0006** | <0.0005 |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.0005 | **0.016** | **0.017** | 6% | <0.01 | N.A. | **0.0052** | **0.0040** | 26% | **0.0045** | 14% | **0.0005** | **0.0012** |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.001 | **0.002** | **0.002** | 0% | <0.02 | N.A. | **0.001** | **0.001** | 0% | **0.001** | 0% | <0.001 | <0.001 |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.001 | **0.002** | **0.002** | 0% | <0.02 | N.A. | <0.001 | <0.001 | 0% | <0.001 | 0% | <0.001 | <0.001 |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.0002 | **0.068** | **0.058** | 16% | **0.04** | 52% | **0.0043** | **0.0033** | 26% | **0.0042** | 2% | **0.0017** | **0.0014** |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.0002 | **0.0003** | **0.0003** | 0% | <0.02 | N.A. | **0.0002** | <0.0002 | 0% | <0.0002 | 0% | <0.0002 | <0.0002 |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.0002 | **0.016** | **0.020** | 22% | **0.01** | 46% | **0.0043** | **0.0030** | 36% | **0.0038** | 12% | **0.0017** | **0.0018** |
| Sum of PFHxS and PFOS | µg/L | | **0.0840** | **0.0780** | 7% | **0.05** | 51% | **0.0086** | **0.0063** | 31% | **0.0080** | 7% | **0.0034** | **0.0032** |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | 0% | <0.05 | N.A. | <0.0005 | <0.0005 | 0% | <0.0005 | 0% | <0.0005 | <0.0005 |

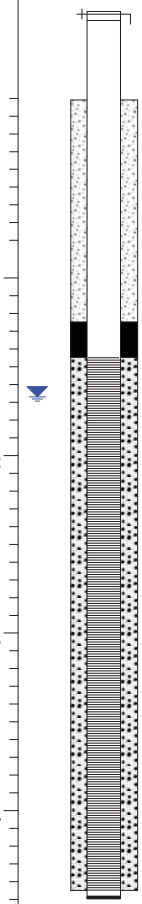
# Appendix A

## Borehole Logs

# MONITORING WELL LOG: MW7



| | | |
|---|---|---|
| **PROJECT No: JME20005** | **DATE: 6 April 2021** | **EASTING: 381109.61** |
| **SITE: 21F School Drive Tomago** | **LOGGED BY: J.McMahon** | **NORTHING: 6367238.55** |
| **CLIENT: Remondis** | **TOTAL DEPTH: 4.5** | **CASING HEIGHT: 0.5m** |
| **CONTRACTOR: FICO Group** | **DRILLER: Sean Curry** | **DRILLING METHOD: Hollow Flight Auger** |

| DEPTH (m) | WELL CONSTRUCTION | LEGEND | DESCRIPTION | ODOUR | PID (ppmv) | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|---|---|
| 0 |  | | Ground Surface | | | | |
| | | | Fill: grey brown SAND with some gravel | | | | |
| | | | Light brown SAND. Potential sand mining tailings? | | | | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical Tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: 1.8 mbgs**

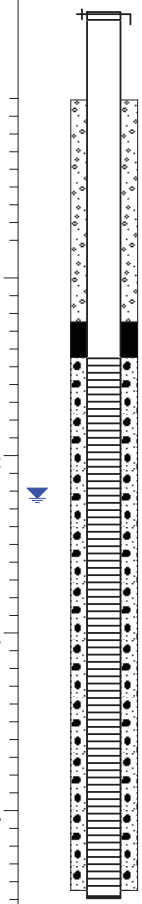
**Static Groundwater Level: 2.199 mbtoc 13/04/2021**

| | | |
|---|---|---|
| | **Reviewed By: JMc** | **FILE** |

# MONITORING WELL LOG: MW8



| | | |
|---|---|---|
| PROJECT No: JME20005 | DATE: 6 April 2021 | EASTING: 381144.77 |
| SITE: 21F School Drive Tomago | LOGGED BY: J.McMahon | NORTHING: 6367275.03 |
| CLIENT: Remondis | TOTAL DEPTH: 4.5 | CASING HEIGHT: 0.5m |
| CONTRACTOR: FICO Group | DRILLER: Sean Curry | DRILLING METHOD: Hollow Flight Auger |

| DEPTH (m) | WELL CONSTRUCTION | LEGEND | DESCRIPTION | ODOUR | PID (ppmv) | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|---|---|
| 0 |  | | Ground Surface | | | | |
| | | | Fill: dark gray SAND, with gravel and cobbles | | | | |
| 1 | | | Light brown SAND. Potential sand mining tailings? | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |

NOTES

Descriptions are based on observations and hand testing of grab samples. Mechanical Tests were not performed unless otherwise stated.

First Occurrence of Groundwater: 1.8 mbgs

Static Groundwater Level: 2.241 mbtoc 13/04/2021

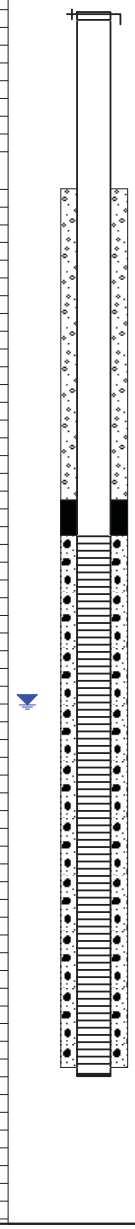
Reviewed By: JMc

FILE

# MONITORING WELL LOG: MW9



| | | |
|---|---|---|
| PROJECT No: JME20005 | DATE: 6 April 2021 | EASTING: 380900.99 |
| SITE: 21D School Drive Tomago | LOGGED BY: J.McMahon | NORTHING: 6367351.91 |
| CLIENT: Remondis | TOTAL DEPTH: 5 | CASING HEIGHT: 1m |
| CONTRACTOR: FICO Group | DRILLER: Sean Curry | DRILLING METHOD: Hollow Flight Auger |

| DEPTH (m) | WELL CONSTRUCTION | LEGEND | DESCRIPTION | ODOUR | PID (ppmv) | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|---|---|
| 0 |  | | Ground Surface<br>Fill: Gravels and sand<br>Fill: grey brown SAND<br>Light brown SAND. Potential sand mining tailings? | | | | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |

**NOTES**

Descriptions are based on observations and hand testing of grab samples. Mechanical Tests were not performed unless otherwise stated.

**First Occurrence of Groundwater: 2 mbgs**

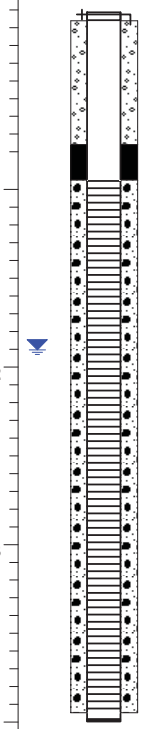
**Static Groundwater Level: 2.904 mbtoc 13/04/2021**

| | | |
|---|---|---|
| | Reviewed By: JMc | FILE |

# MONITORING WELL LOG: MW10



| | | |
|---|---|---|
| PROJECT No: JME20005 | DATE: 3 June 2021 | EASTING: 381010 |
| SITE: 21D School Drive Tomago | LOGGED BY: J.McMahon | NORTHING: 6367258 |
| CLIENT: Remondis | TOTAL DEPTH: 4 | CASING HEIGHT: 0m |
| CONTRACTOR: FICO Group | DRILLER: Sean Curry | DRILLING METHOD: Solid Flight Auger |

| DEPTH (m) | WELL CONSTRUCTION | LEGEND | DESCRIPTION | ODOUR | PID (ppmv) | SAMPLE LABEL | REMARKS |
|---|---|---|---|---|---|---|---|
| |  | | Ground Surface<br>Concrete<br>Fill: grey brown SAND | | | MW10-1<br>MW10-2 | |
| 1 | | | | | | | MW10 was drilled three times. First two times the auger was refused on large ballast |
| 2 | | | Light brown SAND. Potential sand mining tailings? | | | MW10-3 | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |

NOTES

Descriptions are based on observations and hand testing of grab samples. Mechanical Tests were not performed unless otherwise stated.

First Occurrence of Groundwater: 2 mbgs

Static Groundwater Level: 2.904 mbtoc 13/04/2021

| | | |
|---|---|---|
| | Reviewed By: JMc | FILE |

# Appendix B

## Calibration Certificates

Multi Parameter Water Meter

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Instrument **YSI Quatro Pro Plus**
Serial No. **10E101052**

| 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 Calibration*

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 |
|---|---|---|---|---|---|
| 1. pH 10.00 | | pH 10.00 | | 355386 | pH 9.98 |
| 2. pH 7.00 | | pH 7.00 | | 355072 | pH 7.04 |
| 3. pH 4.00 | | pH 4.00 | | 351412 | pH 4.03 |
| 4. mV | | 227.4mV | | 357172/357173 | 227.5 mV |
| 5. EC | | 2.76mS | | 350510 | 2.76mS |
| 6. D.O | | 0.00ppm | | 10959 | 0.03ppm |
| 7. Temp | | 23.1°C | | MultiTherm | 22.2°C |

***Calibrated by:*** **Eloise Carroll**

***Calibration date:*** **9/04/2021**

***Next calibration due:*** **9/05/2021**

## Multi Parameter Water Meter

airmet
Air-Met Scientific Pty Ltd
1300 137 067

**Instrument** YSI Quatro Pro Plus
**Serial No.** 18G103299

| 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 Calibration*

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 |
|---|---|---|---|---|---|
| 1. pH 10.00 | | pH 10.00 | | 355386 | pH 9.96 |
| 2. pH 7.00 | | pH 7.00 | | 360390 | pH 7.08 |
| 3. pH 4.00 | | pH 4.00 | | 367234 | pH 4.20 |
| 4. mV | | 231.8mV | | 364217/358634 | 234.0mV |
| 5. EC | | 2.76mS | | 350510 | 2.75mS |
| 6. D.O | | 0.00ppm | | 10959 | 0.01ppm |
| 7. Temp | | 21.5°C | | MultiTherm | 20.8°C |

***Calibrated by:*** Lauren Tompkins

***Calibration date:*** 1/06/2021

***Next calibration due:*** 1/07/2021

# Appendix B

## Laboratory Documents

SGS

# CHAIN OF CUSTODY & ANALYSIS REQUEST


SGS Environmental Services Sydney
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Facsimile No: (02) 85940499
Telephone No: (02) 85940400
Email:
au.samplereceipt.sydney@sgs.com


Sample Date: 13/04/2021

| | | | |
|---|---|---|---|
| Company Name: | JM Environments | Project Name/No: | JME20006 |
| Address: | 37 Tooke St | Purchase Order No: | JME20006 |
| | COOKS HILL NSW 2300 | Results Required By: | 21/04/2021 |
| Contact Name: | James McMahon | Telephone: | 0427 893 6688 |
| Telephone | 0427 893 668 | Email: | james@jmenvironments.com |

| | | | | | |
|---|---|---|---|---|---|
| Reliquinshed by: J McMahon | Date /Time 15/3/21 4pm | Received by: | | TNT | Date /Time |
| Reliquinshed by: | Date /Time | Received by: | | | Date /Time 16/04/21 @10:35 |
| Samples intact: (Yes)/No | Temperature | 3.1°C | Sample Cooler Sealed | Yes/No | Labortaory Quotation 170719EA |

| Lab ID | Lab Sample ID | Water | Soil | Other | Preservative | No. of Containers | VOC/TPH PAH/8HM | Fluoride | | PFAS | | | | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW4 | x | | | | | x | x | | x | | | | | | | | | |
| 2 | MW5 | x | | | | | x | x | | x | | | | | | | | | |
| 3 | MW6 | x | | | | | x | x | | x | | | | | | | | | |
| 4 | MW7 | x | | | | | x | x | | x | | | | | | | | | |
| 5 | MW8 | x | | | | | x | x | | x | | | | | | | | | |
| 6 | MW9 | x | | | | | x | x | | x | | | | | | | | | |
| 7 | QC1 | x | | | | | x | x | | x | | | | | | | | | |
| 8 | QC1A | x | | | | | x | x | | x | | | | | | | | | |
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SGS EHS Sydney COC
**SE218617**

# SAMPLE RECEIPT ADVICE

SE218617

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20006** |
| Order Number | **JME20006** |
| Samples | 8 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| Samples Received | Thu 15/4/2021 |
| Report Due | Wed 21/4/2021 |
| SGS Reference | **SE218617** |

## SUBMISSION DETAILS

This is to confirm that 8 samples were received on Thursday 15/4/2021. Results are expected to be ready by COB Wednesday 21/4/2021.
Please quote SGS reference SE218617 when making enquiries. Refer below for details relating to sample integrity upon receipt.

| | | | |
|---|---|---|---|
| Samples clearly labelled | Yes | Complete documentation received | Yes |
| Sample container provider | SGS | Sample cooling method | Ice |
| Samples received in correct containers | Yes | Sample counts by matrix | 8 Water |
| Date documentation received | 15/4/2021 | Type of documentation received | COC |
| Samples received in good order | Yes | Samples received without headspace | Yes |
| Sample temperature upon receipt | 3.1°C | Sufficient sample for analysis | Yes |
| Turnaround time requested | Standard | | |

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

## COMMENTS

PFAS subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

# SAMPLE RECEIPT ADVICE

SE218617

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME20006

SUMMARY OF ANALYSIS

| No. | Sample ID | Anions by Ion Chromatography in Water | Mercury (dissolved) in Water | PAH (Polynuclear Aromatic Hydrocarbons) in Water | Trace Metals (Dissolved) in Water by ICPMS | TRH (Total Recoverable Hydrocarbons) in Water | VOCs in Water | Volatile Petroleum Hydrocarbons in Water |
|---|---|---|---|---|---|---|---|---|
| 001 | MW4 | 1 | 1 | 22 | 7 | 9 | 78 | 7 |
| 002 | MW5 | 1 | 1 | 22 | 7 | 9 | 78 | 7 |
| 003 | MW6 | 1 | 1 | 22 | 7 | 9 | 78 | 7 |
| 004 | MW7 | 1 | 1 | 22 | 7 | 9 | 78 | 7 |
| 005 | MW8 | 1 | 1 | 22 | 7 | 9 | 78 | 7 |
| 006 | MW9 | 1 | 1 | 22 | 7 | 9 | 78 | 7 |
| 007 | QC1 | 1 | 1 | 22 | 7 | 9 | 78 | 7 |
| 008 | QC1A | 1 | 1 | 22 | 7 | 9 | 78 | 7 |

CONTINUED OVERLEAF

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

# SAMPLE RECEIPT ADVICE

SE218617

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME20006

SUMMARY OF ANALYSIS

| No. | Sample ID | Per- and Polyfluoroalkyl Substances (PFAS) in |
|---|---|---|
| 001 | MW4 | 55 |
| 002 | MW5 | 55 |
| 003 | MW6 | 55 |
| 004 | MW7 | 55 |
| 005 | MW8 | 55 |
| 006 | MW9 | 55 |
| 007 | QC1 | 55 |
| 008 | QC1A | 55 |

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

# ANALYTICAL REPORT

Accreditation No. 2562

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20006** |
| Order Number | **JME20006** |
| Samples | 8 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE218617 R0** |
| Date Received | 15/4/2021 |
| Date Reported | 22/4/2021 |

## COMMENTS

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

PFAS subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420. Report Numbers ME319993 & ME319993A

MA1523: Some PFAS surrogate recovery values are out of acceptance range due to matrix interference

## SIGNATORIES

**Dong LIANG**
Metals/Inorganics Team Leader

**Ly Kim HA**
Organic Section Head

**Shane MCDERMOTT**
Inorganic/Metals Chemist

## VOCs in Water [AN433] Tested: 20/4/2021

| PARAMETER | UOM | LOR | MW4 WATER - 13/4/2021 SE218617.001 | MW5 WATER - 13/4/2021 SE218617.002 | MW6 WATER - 13/4/2021 SE218617.003 | MW7 WATER - 13/4/2021 SE218617.004 | MW8 WATER - 13/4/2021 SE218617.005 |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | µg/L | 5 | <5 | <5 | <5 | <5 | <5 |
| Chloromethane | µg/L | 5 | <5 | <5 | <5 | <5 | <5 |
| Vinyl chloride (Chloroethene) | µg/L | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Bromomethane | µg/L | 10 | <10 | <10 | <10 | <10 | <10 |
| Chloroethane | µg/L | 5 | <5 | <5 | <5 | <5 | <5 |
| Trichlorofluoromethane | µg/L | 1 | <1 | <1 | <1 | <1 | <1 |
| Acetone (2-propanone) | µg/L | 10 | <10 | <10 | <10 | <10 | <10 |
| Iodomethane | µg/L | 5 | <5 | <5 | <5 | <5 | <5 |
| 1,1-dichloroethene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Acrylonitrile | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Dichloromethane (Methylene chloride) | µg/L | 5 | <5 | <5 | <5 | <5 | <5 |
| Allyl chloride | µg/L | 2 | <2 | <2 | <2 | <2 | <2 |
| Carbon disulfide | µg/L | 2 | <2 | <2 | <2 | <2 | <2 |
| trans-1,2-dichloroethene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| MtBE (Methyl-tert-butyl ether) | µg/L | 2 | <2 | <2 | <2 | <2 | <2 |
| 1,1-dichloroethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Vinyl acetate | µg/L | 10 | <10 | <10 | <10 | <10 | <10 |
| MEK (2-butanone) | µg/L | 10 | <10 | <10 | <10 | <10 | <10 |
| cis-1,2-dichloroethene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Bromochloromethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chloroform (THM) | µg/L | 0.5 | <0.5 | **0.9** | <0.5 | <0.5 | <0.5 |
| 2,2-dichloropropane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,2-dichloroethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,1,1-trichloroethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,1-dichloropropene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Carbon tetrachloride | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Benzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Dibromomethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,2-dichloropropane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Trichloroethene (Trichloroethylene,TCE) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2-nitropropane | µg/L | 100 | <100 | <100 | <100 | <100 | <100 |
| Bromodichloromethane (THM) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| MIBK (4-methyl-2-pentanone) | µg/L | 5 | <5 | <5 | <5 | <5 | <5 |
| cis-1,3-dichloropropene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| trans-1,3-dichloropropene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,1,2-trichloroethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Toluene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,3-dichloropropane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Dibromochloromethane (THM) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2-hexanone (MBK) | µg/L | 5 | <5 | <5 | <5 | <5 | <5 |
| 1,2-dibromoethane (EDB) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Tetrachloroethene (Perchloroethylene,PCE) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,1,1,2-tetrachloroethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Ethylbenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Bromoform (THM) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| m/p-xylene | µg/L | 1 | <1 | <1 | <1 | <1 | <1 |
| cis-1,4-dichloro-2-butene | µg/L | 1 | <1 | <1 | <1 | <1 | <1 |
| Styrene (Vinyl benzene) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,1,2,2-tetrachloroethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| o-xylene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Total Xylenes | µg/L | 1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 |
| 1,2,3-trichloropropane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| trans-1,4-dichloro-2-butene | µg/L | 1 | <1 | <1 | <1 | <1 | <1 |
| Isopropylbenzene (Cumene) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Bromobenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |

## VOCs in Water [AN433] Tested: 20/4/2021 (continued)

| PARAMETER | UOM | LOR | MW4 WATER - 13/4/2021 SE218617.001 | MW5 WATER - 13/4/2021 SE218617.002 | MW6 WATER - 13/4/2021 SE218617.003 | MW7 WATER - 13/4/2021 SE218617.004 | MW8 WATER - 13/4/2021 SE218617.005 |
|---|---|---|---|---|---|---|---|
| n-propylbenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2-chlorotoluene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 4-chlorotoluene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,3,5-trimethylbenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| tert-butylbenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,2,4-trimethylbenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| sec-butylbenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,3-dichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,4-dichlorobenzene | µg/L | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| p-isopropyltoluene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,2-dichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| n-butylbenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,2-dibromo-3-chloropropane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,2,4-trichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Naphthalene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Hexachlorobutadiene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 1,2,3-trichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Total BTEX | µg/L | 3 | <3 | <3 | <3 | <3 | <3 |
| Total VOC | µg/L | 10 | <10 | <10 | <10 | <10 | <10 |

## VOCs in Water [AN433] Tested: 20/4/2021 (continued)

| PARAMETER | UOM | LOR | MW9 WATER - 13/4/2021 SE218617.006 | QC1 WATER - 13/4/2021 SE218617.007 | QC1A WATER - 13/4/2021 SE218617.008 |
|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | µg/L | 5 | <5 | <5 | <5 |
| Chloromethane | µg/L | 5 | <5 | <5 | <5 |
| Vinyl chloride (Chloroethene) | µg/L | 0.3 | <0.3 | <0.3 | <0.3 |
| Bromomethane | µg/L | 10 | <10 | <10 | <10 |
| Chloroethane | µg/L | 5 | <5 | <5 | <5 |
| Trichlorofluoromethane | µg/L | 1 | <1 | <1 | <1 |
| Acetone (2-propanone) | µg/L | 10 | <10 | <10 | <10 |
| Iodomethane | µg/L | 5 | <5 | <5 | <5 |
| 1,1-dichloroethene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Acrylonitrile | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Dichloromethane (Methylene chloride) | µg/L | 5 | <5 | <5 | <5 |
| Allyl chloride | µg/L | 2 | <2 | <2 | <2 |
| Carbon disulfide | µg/L | 2 | <2 | <2 | <2 |
| trans-1,2-dichloroethene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| MtBE (Methyl-tert-butyl ether) | µg/L | 2 | <2 | <2 | <2 |
| 1,1-dichloroethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Vinyl acetate | µg/L | 10 | <10 | <10 | <10 |
| MEK (2-butanone) | µg/L | 10 | <10 | <10 | <10 |
| cis-1,2-dichloroethene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Bromochloromethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Chloroform (THM) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 2,2-dichloropropane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,2-dichloroethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,1,1-trichloroethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,1-dichloropropene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Carbon tetrachloride | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Benzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Dibromomethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,2-dichloropropane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Trichloroethene (Trichloroethylene,TCE) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 2-nitropropane | µg/L | 100 | <100 | <100 | <100 |
| Bromodichloromethane (THM) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| MIBK (4-methyl-2-pentanone) | µg/L | 5 | <5 | <5 | <5 |
| cis-1,3-dichloropropene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| trans-1,3-dichloropropene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,1,2-trichloroethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Toluene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,3-dichloropropane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Dibromochloromethane (THM) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 2-hexanone (MBK) | µg/L | 5 | <5 | <5 | <5 |
| 1,2-dibromoethane (EDB) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Tetrachloroethene (Perchloroethylene,PCE) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,1,1,2-tetrachloroethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Chlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Ethylbenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Bromoform (THM) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| m/p-xylene | µg/L | 1 | <1 | <1 | <1 |
| cis-1,4-dichloro-2-butene | µg/L | 1 | <1 | <1 | <1 |
| Styrene (Vinyl benzene) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,1,2,2-tetrachloroethane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| o-xylene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Total Xylenes | µg/L | 1.5 | <1.5 | <1.5 | <1.5 |
| 1,2,3-trichloropropane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| trans-1,4-dichloro-2-butene | µg/L | 1 | <1 | <1 | <1 |
| Isopropylbenzene (Cumene) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Bromobenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |

VOCs in Water [AN433] Tested: 20/4/2021 (continued)

| PARAMETER | UOM | LOR | MW9 WATER - 13/4/2021 SE218617.006 | QC1 WATER - 13/4/2021 SE218617.007 | QC1A WATER - 13/4/2021 SE218617.008 |
|---|---|---|---|---|---|
| n-propylbenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 2-chlorotoluene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 4-chlorotoluene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,3,5-trimethylbenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| tert-butylbenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,2,4-trimethylbenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| sec-butylbenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,3-dichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,4-dichlorobenzene | µg/L | 0.3 | <0.3 | <0.3 | <0.3 |
| p-isopropyltoluene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,2-dichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| n-butylbenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,2-dibromo-3-chloropropane | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,2,4-trichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Naphthalene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Hexachlorobutadiene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| 1,2,3-trichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| Total BTEX | µg/L | 3 | <3 | <3 | <3 |
| Total VOC | µg/L | 10 | <10 | <10 | <10 |

## Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 20/4/2021

| PARAMETER | UOM | LOR | MW4 WATER - 13/4/2021 SE218617.001 | MW5 WATER - 13/4/2021 SE218617.002 | MW6 WATER - 13/4/2021 SE218617.003 | MW7 WATER - 13/4/2021 SE218617.004 | MW8 WATER - 13/4/2021 SE218617.005 |
|---|---|---|---|---|---|---|---|
| Benzene (F0) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| TRH C6-C9 | µg/L | 40 | <40 | <40 | <40 | <40 | <40 |
| TRH C6-C10 | µg/L | 50 | <50 | <50 | <50 | <50 | <50 |
| TRH C6-C10 minus BTEX (F1) | µg/L | 50 | <50 | <50 | <50 | <50 | <50 |

| PARAMETER | UOM | LOR | MW9 WATER - 13/4/2021 SE218617.006 | QC1 WATER - 13/4/2021 SE218617.007 | QC1A WATER - 13/4/2021 SE218617.008 |
|---|---|---|---|---|---|
| Benzene (F0) | µg/L | 0.5 | <0.5 | <0.5 | <0.5 |
| TRH C6-C9 | µg/L | 40 | <40 | <40 | <40 |
| TRH C6-C10 | µg/L | 50 | <50 | <50 | <50 |
| TRH C6-C10 minus BTEX (F1) | µg/L | 50 | <50 | <50 | <50 |

## TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 19/4/2021

| PARAMETER | UOM | LOR | MW4 WATER - 13/4/2021 SE218617.001 | MW5 WATER - 13/4/2021 SE218617.002 | MW6 WATER - 13/4/2021 SE218617.003 | MW7 WATER - 13/4/2021 SE218617.004 | MW8 WATER - 13/4/2021 SE218617.005 |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | µg/L | 50 | <50 | <50 | <50 | <50 | <50 |
| TRH C15-C28 | µg/L | 200 | <200 | <200 | <200 | <200 | <200 |
| TRH C29-C36 | µg/L | 200 | <200 | <200 | <200 | <200 | <200 |
| TRH C37-C40 | µg/L | 200 | <200 | <200 | <200 | <200 | <200 |
| TRH >C10-C16 | µg/L | 60 | <60 | <60 | <60 | <60 | <60 |
| TRH >C10-C16 - Naphthalene (F2) | µg/L | 60 | <60 | <60 | <60 | <60 | <60 |
| TRH >C16-C34 (F3) | µg/L | 500 | <500 | <500 | <500 | <500 | <500 |
| TRH >C34-C40 (F4) | µg/L | 500 | <500 | <500 | <500 | <500 | <500 |
| TRH C10-C40 | µg/L | 320 | <320 | <320 | <320 | <320 | <320 |

| PARAMETER | UOM | LOR | MW9 WATER - 13/4/2021 SE218617.006 | QC1 WATER - 13/4/2021 SE218617.007 | QC1A WATER - 13/4/2021 SE218617.008 |
|---|---|---|---|---|---|
| TRH C10-C14 | µg/L | 50 | <50 | <50 | <50 |
| TRH C15-C28 | µg/L | 200 | <200 | <200 | <200 |
| TRH C29-C36 | µg/L | 200 | <200 | <200 | <200 |
| TRH C37-C40 | µg/L | 200 | <200 | <200 | <200 |
| TRH >C10-C16 | µg/L | 60 | <60 | <60 | <60 |
| TRH >C10-C16 - Naphthalene (F2) | µg/L | 60 | <60 | <60 | <60 |
| TRH >C16-C34 (F3) | µg/L | 500 | <500 | <500 | <500 |
| TRH >C34-C40 (F4) | µg/L | 500 | <500 | <500 | <500 |
| TRH C10-C40 | µg/L | 320 | <320 | <320 | <320 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 19/4/2021

| PARAMETER | UOM | LOR | MW4 WATER - 13/4/2021 SE218617.001 | MW5 WATER - 13/4/2021 SE218617.002 | MW6 WATER - 13/4/2021 SE218617.003 | MW7 WATER - 13/4/2021 SE218617.004 | MW8 WATER - 13/4/2021 SE218617.005 |
|---|---|---|---|---|---|---|---|
| Naphthalene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b&j)fluoranthene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(k)fluoranthene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)pyrene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Indeno(1,2,3-cd)pyrene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibenzo(ah)anthracene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(ghi)perylene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Total PAH (18) | µg/L | 1 | <1 | <1 | <1 | <1 | <1 |

| PARAMETER | UOM | LOR | MW9 WATER - 13/4/2021 SE218617.006 | QC1 WATER - 13/4/2021 SE218617.007 | QC1A WATER - 13/4/2021 SE218617.008 |
|---|---|---|---|---|---|
| Naphthalene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b&j)fluoranthene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(k)fluoranthene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)pyrene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Indeno(1,2,3-cd)pyrene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Dibenzo(ah)anthracene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(ghi)perylene | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Total PAH (18) | µg/L | 1 | <1 | <1 | <1 |

## Anions by Ion Chromatography in Water [AN245] Tested: 20/4/2021

| PARAMETER | UOM | LOR | MW4 WATER - 13/4/2021 SE218617.001 | MW5 WATER - 13/4/2021 SE218617.002 | MW6 WATER - 13/4/2021 SE218617.003 | MW7 WATER - 13/4/2021 SE218617.004 | MW8 WATER - 13/4/2021 SE218617.005 |
|---|---|---|---|---|---|---|---|
| Fluoride | mg/L | 0.1 | **4.6** | **1.5** | **8.7** | <0.10 | <0.10 |

| PARAMETER | UOM | LOR | MW9 WATER - 13/4/2021 SE218617.006 | QC1 WATER - 13/4/2021 SE218617.007 | QC1A WATER - 13/4/2021 SE218617.008 |
|---|---|---|---|---|---|
| Fluoride | mg/L | 0.1 | **12** | <0.10 | **0.15** |

## Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 19/4/2021

| PARAMETER | UOM | LOR | MW4 WATER - 13/4/2021 SE218617.001 | MW5 WATER - 13/4/2021 SE218617.002 | MW6 WATER - 13/4/2021 SE218617.003 | MW7 WATER - 13/4/2021 SE218617.004 | MW8 WATER - 13/4/2021 SE218617.005 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | µg/L | 1 | 2 | <1 | <1 | <1 | <1 |
| Cadmium, Cd | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Copper, Cu | µg/L | 1 | 3 | 3 | 1 | 3 | <1 |
| Chromium, Cr | µg/L | 1 | 3 | 3 | 6 | 4 | 3 |
| Nickel, Ni | µg/L | 1 | 2 | 2 | <1 | <1 | <1 |
| Lead, Pb | µg/L | 1 | <1 | <1 | <1 | <1 | <1 |
| Zinc, Zn | µg/L | 5 | 34 | 33 | 6 | 89 | 18 |

| PARAMETER | UOM | LOR | MW9 WATER - 13/4/2021 SE218617.006 | QC1 WATER - 13/4/2021 SE218617.007 | QC1A WATER - 13/4/2021 SE218617.008 |
|---|---|---|---|---|---|
| Arsenic, As | µg/L | 1 | <1 | <1 | <1 |
| Cadmium, Cd | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Copper, Cu | µg/L | 1 | <1 | 2 | <1 |
| Chromium, Cr | µg/L | 1 | 3 | 4 | 4 |
| Nickel, Ni | µg/L | 1 | <1 | <1 | <1 |
| Lead, Pb | µg/L | 1 | <1 | <1 | <1 |
| Zinc, Zn | µg/L | 5 | <5 | 83 | 77 |

## Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 19/4/2021

| PARAMETER | UOM | LOR | MW4 WATER - 13/4/2021 SE218617.001 | MW5 WATER - 13/4/2021 SE218617.002 | MW6 WATER - 13/4/2021 SE218617.003 | MW7 WATER - 13/4/2021 SE218617.004 | MW8 WATER - 13/4/2021 SE218617.005 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/L | 0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |

| PARAMETER | UOM | LOR | MW9 WATER - 13/4/2021 SE218617.006 | QC1 WATER - 13/4/2021 SE218617.007 | QC1A WATER - 13/4/2021 SE218617.008 |
|---|---|---|---|---|---|
| Mercury | mg/L | 0.0001 | <0.0001 | <0.0001 | <0.0001 |

## Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level [MA-1523] Tested: 20/4/2021

| PARAMETER | UOM | LOR | MW4 WATER - 13/4/2021 SE218617.001 | MW5 WATER - 13/4/2021 SE218617.002 | MW6 WATER - 13/4/2021 SE218617.003 | MW7 WATER - 13/4/2021 SE218617.004 | MW8 WATER - 13/4/2021 SE218617.005 |
|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | µg/L | 0.0005 | **0.020** | **0.022** | <0.0005 | **0.0030** | <0.0005 |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.0005 | **0.0079** | **0.0055** | <0.0005 | **0.0034** | <0.0005 |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.0005 | **0.0095** | **0.0072** | <0.0005 | **0.0048** | <0.0005 |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.0005 | **0.0053** | **0.0022** | <0.0005 | **0.0014** | <0.0005 |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.0005 | **0.0067** | **0.0023** | <0.0005 | **0.0052** | **0.0031** |
| Perfluorononanoic acid (PFNA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.001 | **0.003** | **0.002** | <0.001 | **0.001** | **0.002** |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.001 | **0.003** | **0.002** | <0.001 | <0.001 | **0.002** |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.0002 | **0.028** | **0.015** | **0.0006** | **0.0043** | **0.023** |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.0002 | **0.0006** | <0.0002 | <0.0002 | **0.0002** | **0.0004** |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.0002 | **0.0063** | **0.0057** | <0.0002 | **0.0043** | **0.0040** |
| Sum of PFHxS and PFOS | µg/L | 0.0002 | **0.035** | **0.020** | **0.0006** | **0.0086** | **0.027** |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.0005 | <0.0005 | **0.0050** | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |

## Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level [MA-1523] Tested: 20/4/2021 (continued)

| PARAMETER | UOM | LOR | MW9 WATER - 13/4/2021 SE218617.006 | QC1 WATER - 13/4/2021 SE218617.007 | QC1A WATER - 13/4/2021 SE218617.008 |
|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | µg/L | 0.0005 | <0.0005 | **0.0024** | **0.0021** |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.0005 | <0.0005 | **0.0023** | **0.0021** |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.0005 | <0.0005 | **0.0039** | **0.0036** |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.0005 | <0.0005 | **0.0020** | **0.0015** |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.0005 | <0.0005 | **0.0040** | **0.0045** |
| Perfluorononanoic acid (PFNA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.001 | <0.001 | **0.001** | **0.001** |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.0002 | **0.0003** | **0.0033** | **0.0042** |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.0002 | <0.0002 | **0.0030** | **0.0038** |
| Sum of PFHxS and PFOS | µg/L | 0.0002 | **0.0003** | **0.0063** | **0.0080** |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.002 | <0.002 | <0.002 | <0.002 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 |

| METHOD | METHODOLOGY SUMMARY |
|---|---|
| AN020 | Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B. |
| AN245 | Anions by Ion Chromatography: A water sample is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO2, NO3 and SO4 are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B |
| 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 Recoveerable 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). |
| 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. |
| MA-1523 | This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts, determined as the total of linear and branched isomers. After spiking with isotopically labelled quantification surrogates and clean-up via SPE cartridges sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification. |

FOOTNOTES

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

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or

# STATEMENT OF QA/QC PERFORMANCE

**SE218617 R0**

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20006** |
| Order Number | **JME20006** |
| Samples | 8 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE218617 R0** |
| Date Received | 15 Apr 2021 |
| Date Reported | 22 Apr 2021 |

## 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 | 3 items |
| | Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level | 2 items |

## SAMPLE SUMMARY

# HOLDING TIME SUMMARY

SE218617 R0

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

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

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

## Anions by Ion Chromatography in Water

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| MW4 | SE218617.001 | LB222913 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 20 Apr 2021 | 11 May 2021 | 20 Apr 2021 |
| MW5 | SE218617.002 | LB222913 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 20 Apr 2021 | 11 May 2021 | 20 Apr 2021 |
| MW6 | SE218617.003 | LB222913 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 20 Apr 2021 | 11 May 2021 | 20 Apr 2021 |
| MW7 | SE218617.004 | LB222913 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 20 Apr 2021 | 11 May 2021 | 20 Apr 2021 |
| MW8 | SE218617.005 | LB222913 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 20 Apr 2021 | 11 May 2021 | 20 Apr 2021 |
| MW9 | SE218617.006 | LB222913 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 20 Apr 2021 | 11 May 2021 | 20 Apr 2021 |
| QC1 | SE218617.007 | LB222913 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 20 Apr 2021 | 11 May 2021 | 20 Apr 2021 |
| QC1A | SE218617.008 | LB222913 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 20 Apr 2021 | 11 May 2021 | 20 Apr 2021 |

## 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 |
|---|---|---|---|---|---|---|---|---|
| MW4 | SE218617.001 | LB222817 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 19 Apr 2021 | 11 May 2021 | 19 Apr 2021 |
| MW5 | SE218617.002 | LB222817 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 19 Apr 2021 | 11 May 2021 | 19 Apr 2021 |
| MW6 | SE218617.003 | LB222817 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 19 Apr 2021 | 11 May 2021 | 19 Apr 2021 |
| MW7 | SE218617.004 | LB222817 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 19 Apr 2021 | 11 May 2021 | 19 Apr 2021 |
| MW8 | SE218617.005 | LB222817 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 19 Apr 2021 | 11 May 2021 | 19 Apr 2021 |
| MW9 | SE218617.006 | LB222817 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 19 Apr 2021 | 11 May 2021 | 19 Apr 2021 |
| QC1 | SE218617.007 | LB222817 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 19 Apr 2021 | 11 May 2021 | 19 Apr 2021 |
| QC1A | SE218617.008 | LB222817 | 13 Apr 2021 | 15 Apr 2021 | 11 May 2021 | 19 Apr 2021 | 11 May 2021 | 19 Apr 2021 |

## 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 |
|---|---|---|---|---|---|---|---|---|
| MW4 | SE218617.001 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |
| MW5 | SE218617.002 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |
| MW6 | SE218617.003 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |
| MW7 | SE218617.004 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |
| MW8 | SE218617.005 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |
| MW9 | SE218617.006 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |
| QC1 | SE218617.007 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |
| QC1A | SE218617.008 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |

## 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 |
|---|---|---|---|---|---|---|---|---|
| MW4 | SE218617.001 | LB222814 | 13 Apr 2021 | 15 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 |
| MW5 | SE218617.002 | LB222814 | 13 Apr 2021 | 15 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 |
| MW6 | SE218617.003 | LB222814 | 13 Apr 2021 | 15 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 |
| MW7 | SE218617.004 | LB222814 | 13 Apr 2021 | 15 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 |
| MW8 | SE218617.005 | LB222814 | 13 Apr 2021 | 15 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 |
| MW9 | SE218617.006 | LB222814 | 13 Apr 2021 | 15 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 |
| QC1 | SE218617.007 | LB222814 | 13 Apr 2021 | 15 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 |
| QC1A | SE218617.008 | LB222814 | 13 Apr 2021 | 15 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 | 10 Oct 2021 | 19 Apr 2021 |

## 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 |
|---|---|---|---|---|---|---|---|---|
| MW4 | SE218617.001 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |
| MW5 | SE218617.002 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |
| MW6 | SE218617.003 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |
| MW7 | SE218617.004 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |
| MW8 | SE218617.005 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |
| MW9 | SE218617.006 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |
| QC1 | SE218617.007 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |
| QC1A | SE218617.008 | LB222820 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 19 Apr 2021 | 29 May 2021 | 20 Apr 2021 |

## VOCs in Water

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| MW4 | SE218617.001 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |
| MW5 | SE218617.002 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |
| MW6 | SE218617.003 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |
| MW7 | SE218617.004 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |
| MW8 | SE218617.005 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |
| MW9 | SE218617.006 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |
| QC1 | SE218617.007 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |

# HOLDING TIME SUMMARY

SE218617 R0

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

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

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

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| QC1A | SE218617.008 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| MW4 | SE218617.001 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |
| MW5 | SE218617.002 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |
| MW6 | SE218617.003 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |
| MW7 | SE218617.004 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |
| MW8 | SE218617.005 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |
| MW9 | SE218617.006 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |
| QC1 | SE218617.007 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |
| QC1A | SE218617.008 | LB222924 | 13 Apr 2021 | 15 Apr 2021 | 20 Apr 2021 | 20 Apr 2021 | 30 May 2021 | 21 Apr 2021 |

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

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

**PAH (Polynuclear Aromatic Hydrocarbons) in Water** — Method: ME-(AU)-[ENV]AN420

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| 2-fluorobiphenyl (Surrogate) | MW4 | SE218617.001 | % | 40 - 130% | 29 ④ |
| | MW5 | SE218617.002 | % | 40 - 130% | 58 |
| | MW6 | SE218617.003 | % | 40 - 130% | 63 |
| | MW7 | SE218617.004 | % | 40 - 130% | 48 |
| | MW8 | SE218617.005 | % | 40 - 130% | 54 |
| | MW9 | SE218617.006 | % | 40 - 130% | 65 |
| | QC1 | SE218617.007 | % | 40 - 130% | 52 |
| | QC1A | SE218617.008 | % | 40 - 130% | 55 |
| d14-p-terphenyl (Surrogate) | MW4 | SE218617.001 | % | 40 - 130% | 45 |
| | MW5 | SE218617.002 | % | 40 - 130% | 89 |
| | MW6 | SE218617.003 | % | 40 - 130% | 90 |
| | MW7 | SE218617.004 | % | 40 - 130% | 65 |
| | MW8 | SE218617.005 | % | 40 - 130% | 73 |
| | MW9 | SE218617.006 | % | 40 - 130% | 88 |
| | QC1 | SE218617.007 | % | 40 - 130% | 81 |
| | QC1A | SE218617.008 | % | 40 - 130% | 82 |
| d5-nitrobenzene (Surrogate) | MW4 | SE218617.001 | % | 40 - 130% | 24 ④ |
| | MW5 | SE218617.002 | % | 40 - 130% | 48 |
| | MW6 | SE218617.003 | % | 40 - 130% | 50 |
| | MW7 | SE218617.004 | % | 40 - 130% | 39 ① |
| | MW8 | SE218617.005 | % | 40 - 130% | 43 |
| | MW9 | SE218617.006 | % | 40 - 130% | 50 |
| | QC1 | SE218617.007 | % | 40 - 130% | 44 |
| | QC1A | SE218617.008 | % | 40 - 130% | 47 |

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level** — Method: MA-1523

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 116 |
| | MW5 | SE218617.002 | % | 10 - 150% | 95 |
| | MW6 | SE218617.003 | % | 10 - 150% | 102 |
| | MW7 | SE218617.004 | % | 10 - 150% | 118 |
| | MW8 | SE218617.005 | % | 10 - 150% | 132 |
| | MW9 | SE218617.006 | % | 10 - 150% | 93 |
| | QC1 | SE218617.007 | % | 10 - 150% | 110 |
| | QC1A | SE218617.008 | % | 10 - 150% | 91 |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 61 |
| | MW5 | SE218617.002 | % | 10 - 150% | 60 |
| | MW6 | SE218617.003 | % | 10 - 150% | 78 |
| | MW7 | SE218617.004 | % | 10 - 150% | 72 |
| | MW8 | SE218617.005 | % | 10 - 150% | 73 |
| | MW9 | SE218617.006 | % | 10 - 150% | 73 |
| | QC1 | SE218617.007 | % | 10 - 150% | 79 |
| | QC1A | SE218617.008 | % | 10 - 150% | 73 |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 67 |
| | MW5 | SE218617.002 | % | 10 - 150% | 67 |
| | MW6 | SE218617.003 | % | 10 - 150% | 81 |
| | MW7 | SE218617.004 | % | 10 - 150% | 67 |
| | MW8 | SE218617.005 | % | 10 - 150% | 78 |
| | MW9 | SE218617.006 | % | 10 - 150% | 78 |
| | QC1 | SE218617.007 | % | 10 - 150% | 91 |
| | QC1A | SE218617.008 | % | 10 - 150% | 82 |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 93 |
| | MW5 | SE218617.002 | % | 10 - 150% | 64 |
| | MW6 | SE218617.003 | % | 10 - 150% | 73 |
| | MW7 | SE218617.004 | % | 10 - 150% | 90 |
| | MW8 | SE218617.005 | % | 10 - 150% | 96 |
| | MW9 | SE218617.006 | % | 10 - 150% | 78 |
| | QC1 | SE218617.007 | % | 10 - 150% | 85 |
| | QC1A | SE218617.008 | % | 10 - 150% | 84 |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 116 |
| | MW5 | SE218617.002 | % | 10 - 150% | 96 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level (continued)** **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C2-PFDoA) Isotopically Labelled Internal Recovery Standard | MW6 | SE218617.003 | % | 10 - 150% | 98 |
| | MW7 | SE218617.004 | % | 10 - 150% | 111 |
| | MW8 | SE218617.005 | % | 10 - 150% | 131 |
| | MW9 | SE218617.006 | % | 10 - 150% | 99 |
| | QC1 | SE218617.007 | % | 10 - 150% | 111 |
| | QC1A | SE218617.008 | % | 10 - 150% | 94 |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 142 |
| | MW5 | SE218617.002 | % | 10 - 150% | 88 |
| | MW6 | SE218617.003 | % | 10 - 150% | 100 |
| | MW7 | SE218617.004 | % | 10 - 150% | 151 † |
| | MW8 | SE218617.005 | % | 10 - 150% | 163 † |
| | MW9 | SE218617.006 | % | 10 - 150% | 93 |
| | QC1 | SE218617.007 | % | 10 - 150% | 117 |
| | QC1A | SE218617.008 | % | 10 - 150% | 86 |
| (13C3-PFBS) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 90 |
| | MW5 | SE218617.002 | % | 10 - 150% | 90 |
| | MW6 | SE218617.003 | % | 10 - 150% | 98 |
| | MW7 | SE218617.004 | % | 10 - 150% | 86 |
| | MW8 | SE218617.005 | % | 10 - 150% | 85 |
| | MW9 | SE218617.006 | % | 10 - 150% | 95 |
| | QC1 | SE218617.007 | % | 10 - 150% | 97 |
| | QC1A | SE218617.008 | % | 10 - 150% | 91 |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 101 |
| | MW5 | SE218617.002 | % | 10 - 150% | 95 |
| | MW6 | SE218617.003 | % | 10 - 150% | 91 |
| | MW7 | SE218617.004 | % | 10 - 150% | 94 |
| | MW8 | SE218617.005 | % | 10 - 150% | 95 |
| | MW9 | SE218617.006 | % | 10 - 150% | 100 |
| | QC1 | SE218617.007 | % | 10 - 150% | 103 |
| | QC1A | SE218617.008 | % | 10 - 150% | 90 |
| (13C4_PFOA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 107 |
| | MW5 | SE218617.002 | % | 10 - 150% | 101 |
| | MW6 | SE218617.003 | % | 10 - 150% | 107 |
| | MW7 | SE218617.004 | % | 10 - 150% | 102 |
| | MW8 | SE218617.005 | % | 10 - 150% | 99 |
| | MW9 | SE218617.006 | % | 10 - 150% | 105 |
| | QC1 | SE218617.007 | % | 10 - 150% | 108 |
| | QC1A | SE218617.008 | % | 10 - 150% | 106 |
| (13C4-PFBA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 100 |
| | MW5 | SE218617.002 | % | 10 - 150% | 102 |
| | MW6 | SE218617.003 | % | 10 - 150% | 99 |
| | MW7 | SE218617.004 | % | 10 - 150% | 100 |
| | MW8 | SE218617.005 | % | 10 - 150% | 100 |
| | MW9 | SE218617.006 | % | 10 - 150% | 99 |
| | QC1 | SE218617.007 | % | 10 - 150% | 101 |
| | QC1A | SE218617.008 | % | 10 - 150% | 99 |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 102 |
| | MW5 | SE218617.002 | % | 10 - 150% | 96 |
| | MW6 | SE218617.003 | % | 10 - 150% | 106 |
| | MW7 | SE218617.004 | % | 10 - 150% | 98 |
| | MW8 | SE218617.005 | % | 10 - 150% | 95 |
| | MW9 | SE218617.006 | % | 10 - 150% | 103 |
| | QC1 | SE218617.007 | % | 10 - 150% | 101 |
| | QC1A | SE218617.008 | % | 10 - 150% | 101 |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 99 |
| | MW5 | SE218617.002 | % | 10 - 150% | 95 |
| | MW6 | SE218617.003 | % | 10 - 150% | 107 |
| | MW7 | SE218617.004 | % | 10 - 150% | 91 |
| | MW8 | SE218617.005 | % | 10 - 150% | 89 |
| | MW9 | SE218617.006 | % | 10 - 150% | 104 |
| | QC1 | SE218617.007 | % | 10 - 150% | 105 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level (continued)** **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C5-PFHxA) Isotopically Labelled Internal Recovery Standard | QC1A | SE218617.008 | % | 10 - 150% | 97 |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 116 |
| | MW5 | SE218617.002 | % | 10 - 150% | 99 |
| | MW6 | SE218617.003 | % | 10 - 150% | 97 |
| | MW7 | SE218617.004 | % | 10 - 150% | 105 |
| | MW8 | SE218617.005 | % | 10 - 150% | 107 |
| | MW9 | SE218617.006 | % | 10 - 150% | 95 |
| | QC1 | SE218617.007 | % | 10 - 150% | 97 |
| | QC1A | SE218617.008 | % | 10 - 150% | 96 |
| (13C6-PFDA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 96 |
| | MW5 | SE218617.002 | % | 10 - 150% | 98 |
| | MW6 | SE218617.003 | % | 10 - 150% | 94 |
| | MW7 | SE218617.004 | % | 10 - 150% | 92 |
| | MW8 | SE218617.005 | % | 10 - 150% | 107 |
| | MW9 | SE218617.006 | % | 10 - 150% | 101 |
| | QC1 | SE218617.007 | % | 10 - 150% | 102 |
| | QC1A | SE218617.008 | % | 10 - 150% | 95 |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 116 |
| | MW5 | SE218617.002 | % | 10 - 150% | 101 |
| | MW6 | SE218617.003 | % | 10 - 150% | 103 |
| | MW7 | SE218617.004 | % | 10 - 150% | 108 |
| | MW8 | SE218617.005 | % | 10 - 150% | 135 |
| | MW9 | SE218617.006 | % | 10 - 150% | 97 |
| | QC1 | SE218617.007 | % | 10 - 150% | 108 |
| | QC1A | SE218617.008 | % | 10 - 150% | 96 |
| (13C8-PFOS) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 98 |
| | MW5 | SE218617.002 | % | 10 - 150% | 105 |
| | MW6 | SE218617.003 | % | 10 - 150% | 103 |
| | MW7 | SE218617.004 | % | 10 - 150% | 108 |
| | MW8 | SE218617.005 | % | 10 - 150% | 106 |
| | MW9 | SE218617.006 | % | 10 - 150% | 115 |
| | QC1 | SE218617.007 | % | 10 - 150% | 114 |
| | QC1A | SE218617.008 | % | 10 - 150% | 107 |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 56 |
| | MW5 | SE218617.002 | % | 10 - 150% | 93 |
| | MW6 | SE218617.003 | % | 10 - 150% | 108 |
| | MW7 | SE218617.004 | % | 10 - 150% | 71 |
| | MW8 | SE218617.005 | % | 10 - 150% | 63 |
| | MW9 | SE218617.006 | % | 10 - 150% | 110 |
| | QC1 | SE218617.007 | % | 10 - 150% | 104 |
| | QC1A | SE218617.008 | % | 10 - 150% | 104 |
| (13C9-PFNA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 101 |
| | MW5 | SE218617.002 | % | 10 - 150% | 90 |
| | MW6 | SE218617.003 | % | 10 - 150% | 97 |
| | MW7 | SE218617.004 | % | 10 - 150% | 96 |
| | MW8 | SE218617.005 | % | 10 - 150% | 100 |
| | MW9 | SE218617.006 | % | 10 - 150% | 104 |
| | QC1 | SE218617.007 | % | 10 - 150% | 92 |
| | QC1A | SE218617.008 | % | 10 - 150% | 107 |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 65 |
| | MW5 | SE218617.002 | % | 10 - 150% | 93 |
| | MW6 | SE218617.003 | % | 10 - 150% | 113 |
| | MW7 | SE218617.004 | % | 10 - 150% | 81 |
| | MW8 | SE218617.005 | % | 10 - 150% | 73 |
| | MW9 | SE218617.006 | % | 10 - 150% | 100 |
| | QC1 | SE218617.007 | % | 10 - 150% | 100 |
| | QC1A | SE218617.008 | % | 10 - 150% | 95 |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 55 |
| | MW5 | SE218617.002 | % | 10 - 150% | 77 |
| | MW6 | SE218617.003 | % | 10 - 150% | 101 |
| | MW7 | SE218617.004 | % | 10 - 150% | 68 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level (continued)** — **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard | MW8 | SE218617.005 | % | 10 - 150% | 56 |
| | MW9 | SE218617.006 | % | 10 - 150% | 90 |
| | QC1 | SE218617.007 | % | 10 - 150% | 95 |
| | QC1A | SE218617.008 | % | 10 - 150% | 98 |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 73 |
| | MW5 | SE218617.002 | % | 10 - 150% | 104 |
| | MW6 | SE218617.003 | % | 10 - 150% | 103 |
| | MW7 | SE218617.004 | % | 10 - 150% | 85 |
| | MW8 | SE218617.005 | % | 10 - 150% | 69 |
| | MW9 | SE218617.006 | % | 10 - 150% | 115 |
| | QC1 | SE218617.007 | % | 10 - 150% | 113 |
| | QC1A | SE218617.008 | % | 10 - 150% | 89 |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 69 |
| | MW5 | SE218617.002 | % | 10 - 150% | 69 |
| | MW6 | SE218617.003 | % | 10 - 150% | 80 |
| | MW7 | SE218617.004 | % | 10 - 150% | 74 |
| | MW8 | SE218617.005 | % | 10 - 150% | 85 |
| | MW9 | SE218617.006 | % | 10 - 150% | 81 |
| | QC1 | SE218617.007 | % | 10 - 150% | 102 |
| | QC1A | SE218617.008 | % | 10 - 150% | 86 |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 62 |
| | MW5 | SE218617.002 | % | 10 - 150% | 102 |
| | MW6 | SE218617.003 | % | 10 - 150% | 98 |
| | MW7 | SE218617.004 | % | 10 - 150% | 76 |
| | MW8 | SE218617.005 | % | 10 - 150% | 67 |
| | MW9 | SE218617.006 | % | 10 - 150% | 101 |
| | QC1 | SE218617.007 | % | 10 - 150% | 102 |
| | QC1A | SE218617.008 | % | 10 - 150% | 98 |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard | MW4 | SE218617.001 | % | 10 - 150% | 64 |
| | MW5 | SE218617.002 | % | 10 - 150% | 94 |
| | MW6 | SE218617.003 | % | 10 - 150% | 104 |
| | MW7 | SE218617.004 | % | 10 - 150% | 96 |
| | MW8 | SE218617.005 | % | 10 - 150% | 68 |
| | MW9 | SE218617.006 | % | 10 - 150% | 115 |
| | QC1 | SE218617.007 | % | 10 - 150% | 104 |
| | QC1A | SE218617.008 | % | 10 - 150% | 100 |

**VOCs in Water** — **Method: ME-(AU)-[ENV]AN433**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Bromofluorobenzene (Surrogate) | MW4 | SE218617.001 | % | 40 - 130% | 98 |
| | MW5 | SE218617.002 | % | 40 - 130% | 97 |
| | MW6 | SE218617.003 | % | 40 - 130% | 99 |
| | MW7 | SE218617.004 | % | 40 - 130% | 98 |
| | MW8 | SE218617.005 | % | 40 - 130% | 99 |
| | MW9 | SE218617.006 | % | 40 - 130% | 98 |
| | QC1 | SE218617.007 | % | 40 - 130% | 100 |
| | QC1A | SE218617.008 | % | 40 - 130% | 99 |
| d4-1,2-dichloroethane (Surrogate) | MW4 | SE218617.001 | % | 40 - 130% | 103 |
| | MW5 | SE218617.002 | % | 40 - 130% | 103 |
| | MW6 | SE218617.003 | % | 40 - 130% | 105 |
| | MW7 | SE218617.004 | % | 40 - 130% | 103 |
| | MW8 | SE218617.005 | % | 40 - 130% | 105 |
| | MW9 | SE218617.006 | % | 40 - 130% | 106 |
| | QC1 | SE218617.007 | % | 40 - 130% | 104 |
| | QC1A | SE218617.008 | % | 40 - 130% | 105 |
| d8-toluene (Surrogate) | MW4 | SE218617.001 | % | 40 - 130% | 97 |
| | MW5 | SE218617.002 | % | 40 - 130% | 96 |
| | MW6 | SE218617.003 | % | 40 - 130% | 98 |
| | MW7 | SE218617.004 | % | 40 - 130% | 98 |
| | MW8 | SE218617.005 | % | 40 - 130% | 97 |
| | MW9 | SE218617.006 | % | 40 - 130% | 97 |

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

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

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| d8-toluene (Surrogate) | QC1 | SE218617.007 | % | 40 - 130% | 98 |
| | QC1A | SE218617.008 | % | 40 - 130% | 98 |

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Bromofluorobenzene (Surrogate) | MW4 | SE218617.001 | % | 40 - 130% | 98 |
| | MW5 | SE218617.002 | % | 40 - 130% | 97 |
| | MW6 | SE218617.003 | % | 40 - 130% | 99 |
| | MW7 | SE218617.004 | % | 40 - 130% | 98 |
| | MW8 | SE218617.005 | % | 40 - 130% | 99 |
| | MW9 | SE218617.006 | % | 40 - 130% | 98 |
| | QC1 | SE218617.007 | % | 40 - 130% | 100 |
| | QC1A | SE218617.008 | % | 40 - 130% | 99 |
| d4-1,2-dichloroethane (Surrogate) | MW4 | SE218617.001 | % | 60 - 130% | 103 |
| | MW5 | SE218617.002 | % | 60 - 130% | 103 |
| | MW6 | SE218617.003 | % | 60 - 130% | 105 |
| | MW7 | SE218617.004 | % | 60 - 130% | 103 |
| | MW8 | SE218617.005 | % | 60 - 130% | 105 |
| | MW9 | SE218617.006 | % | 60 - 130% | 106 |
| | QC1 | SE218617.007 | % | 60 - 130% | 104 |
| | QC1A | SE218617.008 | % | 60 - 130% | 105 |
| d8-toluene (Surrogate) | MW4 | SE218617.001 | % | 40 - 130% | 97 |
| | MW5 | SE218617.002 | % | 40 - 130% | 96 |
| | MW6 | SE218617.003 | % | 40 - 130% | 98 |
| | MW7 | SE218617.004 | % | 40 - 130% | 98 |
| | MW8 | SE218617.005 | % | 40 - 130% | 97 |
| | MW9 | SE218617.006 | % | 40 - 130% | 97 |
| | QC1 | SE218617.007 | % | 40 - 130% | 98 |
| | QC1A | SE218617.008 | % | 40 - 130% | 98 |

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

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

### Anions by Ion Chromatography in Water

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB222913.001 | Fluoride | mg/L | 0.1 | <0.10 |

### Mercury (dissolved) in Water

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB222817.001 | Mercury | mg/L | 0.0001 | <0.0001 |

### PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB222820.001 | | 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) | % | - | 50 |
| | | 2-fluorobiphenyl (Surrogate) | % | - | 56 |
| | | d14-p-terphenyl (Surrogate) | % | - | 72 |

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

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB222814.001 | Arsenic, As | µg/L | 1 | <1 |
| | Cadmium, Cd | µg/L | 0.1 | <0.1 |
| | Chromium, Cr | µg/L | 1 | <1 |
| | Copper, Cu | µg/L | 1 | <1 |
| | Lead, Pb | µg/L | 1 | <1 |
| | Nickel, Ni | µg/L | 1 | <1 |
| | Zinc, Zn | µg/L | 5 | <5 |

### TRH (Total Recoverable Hydrocarbons) in Water

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB222820.001 | 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 |
|---|---|---|---|---|---|
| LB222924.001 | Fumigants | 2,2-dichloropropane | µg/L | 0.5 | <0.5 |
| | | 1,2-dichloropropane | µg/L | 0.5 | <0.5 |
| | | cis-1,3-dichloropropene | µg/L | 0.5 | <0.5 |
| | | trans-1,3-dichloropropene | µg/L | 0.5 | <0.5 |
| | | 1,2-dibromoethane (EDB) | µg/L | 0.5 | <0.5 |
| | Halogenated Aliphatics | Dichlorodifluoromethane (CFC-12) | µg/L | 5 | <5 |
| | | Chloromethane | µg/L | 5 | <5 |
| | | Vinyl chloride (Chloroethene) | µg/L | 0.3 | <0.3 |
| | | Bromomethane | µg/L | 10 | <10 |
| | | Chloroethane | µg/L | 5 | <5 |
| | | Trichlorofluoromethane | µg/L | 1 | <1 |
| | | Iodomethane | µg/L | 5 | <5 |

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

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

VOCs in Water (continued)

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB222924.001 | Halogenated Aliphatics | 1,1-dichloroethene | µg/L | 0.5 | <0.5 |
| | | Dichloromethane (Methylene chloride) | µg/L | 5 | <5 |
| | | Allyl chloride | µg/L | 2 | <2 |
| | | trans-1,2-dichloroethene | µg/L | 0.5 | <0.5 |
| | | 1,1-dichloroethane | µg/L | 0.5 | <0.5 |
| | | cis-1,2-dichloroethene | µg/L | 0.5 | <0.5 |
| | | Bromochloromethane | µg/L | 0.5 | <0.5 |
| | | 1,2-dichloroethane | µg/L | 0.5 | <0.5 |
| | | 1,1,1-trichloroethane | µg/L | 0.5 | <0.5 |
| | | 1,1-dichloropropene | µg/L | 0.5 | <0.5 |
| | | Carbon tetrachloride | µg/L | 0.5 | <0.5 |
| | | Dibromomethane | µg/L | 0.5 | <0.5 |
| | | Trichloroethene (Trichloroethylene,TCE) | µg/L | 0.5 | <0.5 |
| | | 1,1,2-trichloroethane | µg/L | 0.5 | <0.5 |
| | | 1,3-dichloropropane | µg/L | 0.5 | <0.5 |
| | | Tetrachloroethene (Perchloroethylene,PCE) | µg/L | 0.5 | <0.5 |
| | | 1,1,1,2-tetrachloroethane | µg/L | 0.5 | <0.5 |
| | | cis-1,4-dichloro-2-butene | µg/L | 1 | <1 |
| | | 1,1,2,2-tetrachloroethane | µg/L | 0.5 | <0.5 |
| | | 1,2,3-trichloropropane | µg/L | 0.5 | <0.5 |
| | | trans-1,4-dichloro-2-butene | µg/L | 1 | <1 |
| | | 1,2-dibromo-3-chloropropane | µg/L | 0.5 | <0.5 |
| | | Hexachlorobutadiene | µg/L | 0.5 | <0.5 |
| | Halogenated Aromatics | Chlorobenzene | µg/L | 0.5 | <0.5 |
| | | Bromobenzene | µg/L | 0.5 | <0.5 |
| | | 2-chlorotoluene | µg/L | 0.5 | <0.5 |
| | | 4-chlorotoluene | µg/L | 0.5 | <0.5 |
| | | 1,3-dichlorobenzene | µg/L | 0.5 | <0.5 |
| | | 1,4-dichlorobenzene | µg/L | 0.3 | <0.3 |
| | | 1,2-dichlorobenzene | µg/L | 0.5 | <0.5 |
| | | 1,2,4-trichlorobenzene | µg/L | 0.5 | <0.5 |
| | | 1,2,3-trichlorobenzene | µg/L | 0.5 | <0.5 |
| | 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 |
| | | Styrene (Vinyl benzene) | µg/L | 0.5 | <0.5 |
| | | o-xylene | µg/L | 0.5 | <0.5 |
| | | Isopropylbenzene (Cumene) | µg/L | 0.5 | <0.5 |
| | | n-propylbenzene | µg/L | 0.5 | <0.5 |
| | | 1,3,5-trimethylbenzene | µg/L | 0.5 | <0.5 |
| | | tert-butylbenzene | µg/L | 0.5 | <0.5 |
| | | 1,2,4-trimethylbenzene | µg/L | 0.5 | <0.5 |
| | | sec-butylbenzene | µg/L | 0.5 | <0.5 |
| | | p-isopropyltoluene | µg/L | 0.5 | <0.5 |
| | | n-butylbenzene | µg/L | 0.5 | <0.5 |
| | Nitrogenous Compounds | Acrylonitrile | µg/L | 0.5 | <0.5 |
| | Oxygenated Compounds | Acetone (2-propanone) | µg/L | 10 | <10 |
| | | MtBE (Methyl-tert-butyl ether) | µg/L | 2 | <1 |
| | | Vinyl acetate | µg/L | 10 | <10 |
| | | MEK (2-butanone) | µg/L | 10 | <10 |
| | | MIBK (4-methyl-2-pentanone) | µg/L | 5 | <5 |
| | | 2-hexanone (MBK) | µg/L | 5 | <5 |
| | Polycyclic VOCs | Naphthalene | µg/L | 0.5 | <0.5 |
| | Sulphonated | Carbon disulfide | µg/L | 2 | <2 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | % | - | 99 |
| | | d8-toluene (Surrogate) | % | - | 95 |
| | | Bromofluorobenzene (Surrogate) | % | - | 97 |
| | Trihalomethanes | Chloroform (THM) | µg/L | 0.5 | <0.5 |
| | | Bromodichloromethane (THM) | µg/L | 0.5 | <0.5 |
| | | Dibromochloromethane (THM) | µg/L | 0.5 | <0.5 |

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

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

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB222924.001 | Trihalomethanes | Bromoform (THM) | µg/L | 0.5 | <0.5 |

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB222924.001 | | TRH C6-C9 | µg/L | 40 | <40 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | % | - | 99 |
| | | d8-toluene (Surrogate) | % | - | 95 |
| | | Bromofluorobenzene (Surrogate) | % | - | 97 |

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

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

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

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

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

## PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE218617.006 | LB222820.024 | | 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 | 11 |
| | | | 2-fluorobiphenyl (Surrogate) | µg/L | - | 0.3 | 0.3 | 30 | 15 |
| | | | d14-p-terphenyl (Surrogate) | µg/L | - | 0.4 | 0.4 | 30 | 8 |

## Trace Metals (Dissolved) in Water by ICPMS

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE218657.006 | LB222814.014 | Lead, Pb | µg/L | 1 | <1 | <1 | 200 | 0 |

## TRH (Total Recoverable Hydrocarbons) in Water

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE218617.006 | LB222820.024 | | 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 | <320 | <320 | 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 |

## VOCs in Water

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE218617.001 | LB222924.027 | Fumigants | 2,2-dichloropropane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,2-dichloropropane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | cis-1,3-dichloropropene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | trans-1,3-dichloropropene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,2-dibromoethane (EDB) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Halogenated | Dichlorodifluoromethane (CFC-12) | µg/L | 5 | <5 | <5 | 200 | 0 |
| | | Aliphatics | Chloromethane | µg/L | 5 | <5 | <5 | 200 | 0 |
| | | | Vinyl chloride (Chloroethene) | µg/L | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | | Bromomethane | µg/L | 10 | <10 | <10 | 200 | 0 |
| | | | Chloroethane | µg/L | 5 | <5 | <5 | 200 | 0 |
| | | | Trichlorofluoromethane | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | | Iodomethane | µg/L | 5 | <5 | <5 | 200 | 0 |
| | | | 1,1-dichloroethene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Dichloromethane (Methylene chloride) | µg/L | 5 | <5 | <5 | 200 | 0 |
| | | | Allyl chloride | µg/L | 2 | <2 | <2 | 200 | 0 |
| | | | trans-1,2-dichloroethene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,1-dichloroethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | cis-1,2-dichloroethene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Bromochloromethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,2-dichloroethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |

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

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

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

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

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

**VOCs in Water (continued)** **Method: ME-(AU)-[ENV]AN433**

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE218617.001 | LB222924.027 | Halogenated Aliphatics | 1,1,1-trichloroethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,1-dichloropropene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Carbon tetrachloride | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Dibromomethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Trichloroethene (Trichloroethylene,TCE) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,1,2-trichloroethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,3-dichloropropane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Tetrachloroethene (Perchloroethylene,PCE) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,1,1,2-tetrachloroethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | cis-1,4-dichloro-2-butene | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | | 1,1,2,2-tetrachloroethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,2,3-trichloropropane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | trans-1,4-dichloro-2-butene | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | | 1,2-dibromo-3-chloropropane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Hexachlorobutadiene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Halogenated Aromatics | Chlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Bromobenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 2-chlorotoluene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 4-chlorotoluene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,3-dichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,4-dichlorobenzene | µg/L | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | | 1,2-dichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,2,4-trichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,2,3-trichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Monocyclic Aromatic | Benzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 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 |
| | | | Styrene (Vinyl benzene) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | o-xylene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Isopropylbenzene (Cumene) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | n-propylbenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,3,5-trimethylbenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | tert-butylbenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,2,4-trimethylbenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | sec-butylbenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | p-isopropyltoluene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | n-butylbenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Nitrogenous | Acrylonitrile | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Oxygenated Compounds | Acetone (2-propanone) | µg/L | 10 | <10 | <10 | 200 | 0 |
| | | | MtBE (Methyl-tert-butyl ether) | µg/L | 2 | <2 | <0.5 | 200 | 0 |
| | | | Vinyl acetate | µg/L | 10 | <10 | <10 | 200 | 0 |
| | | | MEK (2-butanone) | µg/L | 10 | <10 | <10 | 200 | 0 |
| | | | MIBK (4-methyl-2-pentanone) | µg/L | 5 | <5 | <5 | 200 | 0 |
| | | | 2-hexanone (MBK) | µg/L | 5 | <5 | <5 | 200 | 0 |
| | | Polycyclic | Naphthalene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Sulphonated | Carbon disulfide | µg/L | 2 | <2 | <2 | 200 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | µg/L | - | 10.3 | 9.6 | 30 | 6 |
| | | | d8-toluene (Surrogate) | µg/L | - | 9.7 | 9.6 | 30 | 1 |
| | | | Bromofluorobenzene (Surrogate) | µg/L | - | 9.8 | 9.4 | 30 | 4 |
| | | Trihalomethanes | Chloroform (THM) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Bromodichloromethane (THM) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Dibromochloromethane (THM) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Bromoform (THM) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| SE218680.003 | LB222924.028 | Fumigants | 2,2-dichloropropane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,2-dichloropropane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | cis-1,3-dichloropropene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | trans-1,3-dichloropropene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,2-dibromoethane (EDB) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Halogenated Aliphatics | Dichlorodifluoromethane (CFC-12) | µg/L | 5 | <5 | <5 | 200 | 0 |
| | | | Chloromethane | µg/L | 5 | <5 | <5 | 200 | 0 |

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

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

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

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

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

**VOCs in Water (continued)** **Method: ME-(AU)-[ENV]AN433**

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE218680.003 | LB222924.028 | Halogenated | Vinyl chloride (Chloroethene) | µg/L | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | Aliphatics | Bromomethane | µg/L | 10 | <10 | <10 | 200 | 0 |
| | | | Chloroethane | µg/L | 5 | <5 | <5 | 200 | 0 |
| | | | Trichlorofluoromethane | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | | Iodomethane | µg/L | 5 | <5 | <5 | 200 | 0 |
| | | | 1,1-dichloroethene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Dichloromethane (Methylene chloride) | µg/L | 5 | <5 | <5 | 200 | 0 |
| | | | Allyl chloride | µg/L | 2 | <2 | <2 | 200 | 0 |
| | | | trans-1,2-dichloroethene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,1-dichloroethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | cis-1,2-dichloroethene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Bromochloromethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,2-dichloroethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,1,1-trichloroethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,1-dichloropropene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Carbon tetrachloride | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Dibromomethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Trichloroethene (Trichloroethylene,TCE) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,1,2-trichloroethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,3-dichloropropane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Tetrachloroethene (Perchloroethylene,PCE) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,1,1,2-tetrachloroethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | cis-1,4-dichloro-2-butene | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | | 1,1,2,2-tetrachloroethane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,2,3-trichloropropane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | trans-1,4-dichloro-2-butene | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | | 1,2-dibromo-3-chloropropane | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Hexachlorobutadiene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Halogenated | Chlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Aromatics | Bromobenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 2-chlorotoluene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 4-chlorotoluene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,3-dichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,4-dichlorobenzene | µg/L | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | | 1,2-dichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,2,4-trichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,2,3-trichlorobenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Monocyclic | Benzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Aromatic | Toluene | µg/L | 0.5 | <0.5 | <0.5 | 160 | 0 |
| | | | Ethylbenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | m/p-xylene | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | | Styrene (Vinyl benzene) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | o-xylene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Isopropylbenzene (Cumene) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | n-propylbenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,3,5-trimethylbenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | tert-butylbenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | 1,2,4-trimethylbenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | sec-butylbenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | p-isopropyltoluene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | n-butylbenzene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Nitrogenous | Acrylonitrile | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Oxygenated | Acetone (2-propanone) | µg/L | 10 | <10 | <10 | 200 | 0 |
| | | Compounds | MtBE (Methyl-tert-butyl ether) | µg/L | 2 | <2 | <0.5 | 200 | 0 |
| | | | Vinyl acetate | µg/L | 10 | <10 | <10 | 200 | 0 |
| | | | MEK (2-butanone) | µg/L | 10 | <10 | <10 | 200 | 0 |
| | | | MIBK (4-methyl-2-pentanone) | µg/L | 5 | <5 | <5 | 200 | 0 |
| | | | 2-hexanone (MBK) | µg/L | 5 | <5 | <5 | 200 | 0 |
| | | Polycyclic | Naphthalene | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | Sulphonated | Carbon disulfide | µg/L | 2 | <2 | <2 | 200 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | µg/L | - | 10.5 | 10.0 | 30 | 5 |

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

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

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

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

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

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE218680.003 | LB222924.028 | Surrogates | d8-toluene (Surrogate) | µg/L | - | 9.8 | 9.7 | 30 | 1 |
| | | | Bromofluorobenzene (Surrogate) | µg/L | - | 9.9 | 9.7 | 30 | 2 |
| | | Trihalomethan | Chloroform (THM) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | es | Bromodichloromethane (THM) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Dibromochloromethane (THM) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | Bromoform (THM) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE218617.001 | LB222924.027 | | 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 | - | 10.3 | 9.6 | 30 | 6 |
| | | | d8-toluene (Surrogate) | µg/L | - | 9.7 | 9.6 | 30 | 1 |
| | | | Bromofluorobenzene (Surrogate) | µg/L | - | 9.8 | 9.4 | 30 | 4 |
| | | 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 |
| SE218680.003 | LB222924.028 | | 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 | - | 10.5 | 10.0 | 30 | 5 |
| | | | d8-toluene (Surrogate) | µg/L | - | 9.8 | 9.7 | 30 | 1 |
| | | | Bromofluorobenzene (Surrogate) | µg/L | - | 9.9 | 9.7 | 30 | 2 |
| | | VPH F Bands | Benzene (F0) | µg/L | 0.5 | <0.5 | <0.5 | 200 | 0 |
| | | | TRH C6-C10 minus BTEX (F1) | µg/L | 50 | <50 | <50 | 200 | 0 |

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

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

### Anions by Ion Chromatography in Water

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

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB222913.002 | Fluoride | mg/L | 0.1 | 2.0 | 2 | 80 - 120 | 98 |

### PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB222820.002 | | Naphthalene | µg/L | 0.1 | 27 | 40 | 60 - 140 | 67 |
| | | Acenaphthylene | µg/L | 0.1 | 27 | 40 | 60 - 140 | 67 |
| | | Acenaphthene | µg/L | 0.1 | 27 | 40 | 60 - 140 | 67 |
| | | Phenanthrene | µg/L | 0.1 | 29 | 40 | 60 - 140 | 71 |
| | | Anthracene | µg/L | 0.1 | 30 | 40 | 60 - 140 | 76 |
| | | Fluoranthene | µg/L | 0.1 | 28 | 40 | 60 - 140 | 71 |
| | | Pyrene | µg/L | 0.1 | 30 | 40 | 60 - 140 | 75 |
| | | Benzo(a)pyrene | µg/L | 0.1 | 29 | 40 | 60 - 140 | 71 |
| | Surrogates | d5-nitrobenzene (Surrogate) | µg/L | - | 0.3 | 0.5 | 40 - 130 | 52 |
| | | 2-fluorobiphenyl (Surrogate) | µg/L | - | 0.3 | 0.5 | 40 - 130 | 64 |
| | | d14-p-terphenyl (Surrogate) | µg/L | - | 0.3 | 0.5 | 40 - 130 | 66 |

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

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

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB222814.002 | Arsenic, As | µg/L | 1 | 19 | 20 | 80 - 120 | 95 |
| | Cadmium, Cd | µg/L | 0.1 | 20 | 20 | 80 - 120 | 102 |
| | Chromium, Cr | µg/L | 1 | 21 | 20 | 80 - 120 | 103 |
| | Copper, Cu | µg/L | 1 | 21 | 20 | 80 - 120 | 106 |
| | Lead, Pb | µg/L | 1 | 22 | 20 | 80 - 120 | 111 |
| | Nickel, Ni | µg/L | 1 | 21 | 20 | 80 - 120 | 107 |
| | Zinc, Zn | µg/L | 5 | 22 | 20 | 80 - 120 | 111 |

### TRH (Total Recoverable Hydrocarbons) in Water

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB222820.002 | | TRH C10-C14 | µg/L | 50 | 1200 | 1200 | 60 - 140 | 96 |
| | | TRH C15-C28 | µg/L | 200 | 1400 | 1200 | 60 - 140 | 115 |
| | | TRH C29-C36 | µg/L | 200 | 1400 | 1200 | 60 - 140 | 121 |
| | TRH F Bands | TRH >C10-C16 | µg/L | 60 | 1300 | 1200 | 60 - 140 | 108 |
| | | TRH >C16-C34 (F3) | µg/L | 500 | 1400 | 1200 | 60 - 140 | 113 |
| | | TRH >C34-C40 (F4) | µg/L | 500 | 770 | 600 | 60 - 140 | 128 |

### VOCs in Water

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB222924.002 | Halogenated | 1,1-dichloroethene | µg/L | 0.5 | 49 | 45.45 | 60 - 140 | 107 |
| | Aliphatics | 1,2-dichloroethane | µg/L | 0.5 | 51 | 45.45 | 60 - 140 | 113 |
| | | Trichloroethene (Trichloroethylene,TCE) | µg/L | 0.5 | 50 | 45.45 | 60 - 140 | 109 |
| | Halogenated | Chlorobenzene | µg/L | 0.5 | 53 | 45.45 | 60 - 140 | 117 |
| | Monocyclic | Benzene | µg/L | 0.5 | 42 | 45.45 | 60 - 140 | 92 |
| | Aromatic | Toluene | µg/L | 0.5 | 46 | 45.45 | 60 - 140 | 102 |
| | | Ethylbenzene | µg/L | 0.5 | 48 | 45.45 | 60 - 140 | 106 |
| | | m/p-xylene | µg/L | 1 | 97 | 90.9 | 60 - 140 | 106 |
| | | o-xylene | µg/L | 0.5 | 48 | 45.45 | 60 - 140 | 106 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | µg/L | - | 10.5 | 10 | 60 - 140 | 105 |
| | | d8-toluene (Surrogate) | µg/L | - | 10.0 | 10 | 70 - 130 | 100 |
| | | Bromofluorobenzene (Surrogate) | µg/L | - | 9.8 | 10 | 70 - 130 | 98 |
| | Trihalomethan | Chloroform (THM) | µg/L | 0.5 | 54 | 45.45 | 60 - 140 | 118 |

### Volatile Petroleum Hydrocarbons in Water

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB222924.002 | | TRH C6-C10 | µg/L | 50 | 780 | 946.63 | 60 - 140 | 83 |
| | | TRH C6-C9 | µg/L | 40 | 690 | 818.71 | 60 - 140 | 84 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | µg/L | - | 10.5 | 10 | 60 - 140 | 105 |
| | | d8-toluene (Surrogate) | µg/L | - | 10.0 | 10 | 70 - 130 | 100 |
| | | Bromofluorobenzene (Surrogate) | µg/L | - | 9.8 | 10 | 70 - 130 | 98 |
| | VPH F Bands | TRH C6-C10 minus BTEX (F1) | µg/L | 50 | 500 | 639.67 | 60 - 140 | 79 |

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

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

### Anions by Ion Chromatography in Water

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

| QC Sample | Sample Number | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE218617.008 | LB222913.018 | Fluoride | mg/L | 0.1 | 2.0 | 0.15 | 2 | 91 |

### Mercury (dissolved) in Water

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

| QC Sample | Sample Number | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE218617.001 | LB222817.004 | Mercury | mg/L | 0.0001 | 0.0018 | <0.0001 | 0.008 | 91 |

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

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

| QC Sample | Sample Number | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE218567RE.0 | LB222814.004 | Zinc, Zn | µg/L | 5 | 560 | 540 | 20 | 119 |

### VOCs in Water

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE218680.004 | LB222924.029 | Monocyclic Aromatic | Benzene | µg/L | 0.5 | 44 | <0.5 | 45.45 | 96 |
| | | | Toluene | µg/L | 0.5 | 46 | <0.5 | 45.45 | 101 |
| | | | Ethylbenzene | µg/L | 0.5 | 47 | <0.5 | 45.45 | 104 |
| | | | m/p-xylene | µg/L | 1 | 95 | <1 | 90.9 | 104 |
| | | | o-xylene | µg/L | 0.5 | 48 | <0.5 | 45.45 | 105 |
| | | Polycyclic | Naphthalene | µg/L | 0.5 | 47 | <0.5 | - | - |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | µg/L | - | 0.0 | 10.4 | - | 98 |
| | | | d8-toluene (Surrogate) | µg/L | - | 0.0 | 9.7 | - | 100 |
| | | | Bromofluorobenzene (Surrogate) | µg/L | - | 0.0 | 9.8 | - | 97 |

### Volatile Petroleum Hydrocarbons in Water

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE218680.004 | LB222924.029 | | TRH C6-C10 | µg/L | 50 | 720 | <50 | 946.63 | 76 |
| | | | TRH C6-C9 | µg/L | 40 | 650 | <40 | 818.71 | 79 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | µg/L | - | 0.0 | 10.4 | - | 98 |
| | | | d8-toluene (Surrogate) | µg/L | - | 0.0 | 9.7 | - | 100 |
| | | | Bromofluorobenzene (Surrogate) | µg/L | - | 0.0 | 9.8 | - | 97 |
| | | VPH F Bands | Benzene (F0) | µg/L | 0.5 | | <0.5 | - | - |
| | | | TRH C6-C10 minus BTEX (F1) | µg/L | 50 | 440 | <50 | 639.67 | 69 |

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

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

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

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

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

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

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

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## Yin, Emily (Sydney)

**From:** james@jmenvironments.com
**Sent:** Monday, 26 April 2021 1:25 PM
**To:** AU.SampleReceipt.Sydney (Sydney)
**Cc:** AU.Environmental.Sydney (Sydney)
**Subject:** [EXTERNAL] RE: Report Job SE218617, your reference JME20006, order number JME20006

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. ***

Hi All,

Any chance I could get the dissolved aluminium results as well?

**Kind Regards**

**James McMahon**
0427 893 668
james@jmenvironments.com
Licenced Asbestos Assessor LAA001286
Certified Environmental Practitioner CEnvP 1235
Site Contamination Specialist SC41110

SGS EHS Alexandria Laboratory
SE218617A COC
Received: 26 – Apr – 2021

ENVIRONMENTS

---

**From:** AU.Samplereceipt.Sydney@SGS.com <AU.Samplereceipt.Sydney@SGS.com>
**Sent:** Thursday, 22 April 2021 2:40 PM
**To:** james@jmenvironments.com
**Subject:** Report Job SE218617, your reference JME20006, order number JME20006

Dear Valued Customer,

Please find attached the report for SGS job SE218617, your reference JME20006, order number JME20006.

How are we doing? Please take a quick online Survey

If you have any questions or concerns, please don't hesitate to contact your SGS Client Services representative.

Best Regards,
SGS Alexandria Customer Service Team
SGS Australia Pty Ltd
Phone: +61 (0)2 8594 0400

Information in this email and any attachments is confidential and intended solely for the use of the individual(s) to whom it is addressed or otherwise directed. Please note that any views or opinions presented in this email are solely

# SAMPLE RECEIPT ADVICE

SE218617A

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20006 - AdditionsI** |
| Order Number | **JME20006** |
| Samples | 8 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| Samples Received | Mon 26/4/2021 |
| Report Due | Tue 27/4/2021 |
| SGS Reference | **SE218617A** |

## SUBMISSION DETAILS

This is to confirm that 8 samples were received on Monday 26/4/2021. Results are expected to be ready by COB Tuesday 27/4/2021. Please quote SGS reference SE218617A when making enquiries. Refer below for details relating to sample integrity upon receipt.

| | | | |
|---|---|---|---|
| Samples clearly labelled | Yes | Complete documentation received | Yes |
| Sample container provider | SGS | Sample cooling method | Ice |
| Samples received in correct containers | Yes | Sample counts by matrix | 8 Water |
| Date documentation received | 26/4/2021@1:25pm | Type of documentation received | Email |
| Samples received in good order | Yes | Samples received without headspace | Yes |
| Sample temperature upon receipt | 3.1°C | Sufficient sample for analysis | Yes |
| Turnaround time requested | Next Day | | |

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

## COMMENTS

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# SAMPLE RECEIPT ADVICE

SE218617A

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME20006 - Additionsl

SUMMARY OF ANALYSIS

| No. | Sample ID | Trace Metals (Dissolved) in Water by ICPMS |
|---|---|---|
| 001 | MW4 | 1 |
| 002 | MW5 | 1 |
| 003 | MW6 | 1 |
| 004 | MW7 | 1 |
| 005 | MW8 | 1 |
| 006 | MW9 | 1 |
| 007 | QC1 | 1 |
| 008 | QC1A | 1 |

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

# ANALYTICAL REPORT

Accreditation No. 2562

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20006 - Additional** |
| Order Number | **JME20006** |
| Samples | 8 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE218617A R0** |
| Date Received | 26/4/2021 |
| Date Reported | 26/4/2021 |

## COMMENTS

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

## SIGNATORIES

**Dong LIANG**
Metals/Inorganics Team Leader

## Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 26/4/2021

| PARAMETER | UOM | LOR | MW4 WATER - 13/4/2021 SE218617A.001 | MW5 WATER - 13/4/2021 SE218617A.002 | MW6 WATER - 13/4/2021 SE218617A.003 | MW7 WATER - 13/4/2021 SE218617A.004 | MW8 WATER - 13/4/2021 SE218617A.005 |
|---|---|---|---|---|---|---|---|
| Aluminium, Al | µg/L | 5 | **770** | **270** | **7100** | **250** | **190** |

| PARAMETER | UOM | LOR | MW9 WATER - 13/4/2021 SE218617A.006 | QC1 WATER - 13/4/2021 SE218617A.007 | QC1A WATER - 13/4/2021 SE218617A.008 |
|---|---|---|---|---|---|
| Aluminium, Al | µg/L | 5 | **8800** | **260** | **240** |

| METHOD | METHODOLOGY SUMMARY |
|---|---|
| AN020 | Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B. |
| AN318 | Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4). |

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.

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# STATEMENT OF QA/QC PERFORMANCE

**SE218617A R0**

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20006 - Additional** |
| Order Number | **JME20006** |
| Samples | 8 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE218617A R0** |
| Date Received | 26 Apr 2021 |
| Date Reported | 26 Apr 2021 |

## 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 Alexandria Environmental laboratory).

## SAMPLE SUMMARY

# HOLDING TIME SUMMARY

SE218617A R0

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

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

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

**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 |
|---|---|---|---|---|---|---|---|---|
| MW4 | SE218617A.001 | LB223349 | 13 Apr 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 |
| MW5 | SE218617A.002 | LB223349 | 13 Apr 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 |
| MW6 | SE218617A.003 | LB223349 | 13 Apr 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 |
| MW7 | SE218617A.004 | LB223349 | 13 Apr 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 |
| MW8 | SE218617A.005 | LB223349 | 13 Apr 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 |
| MW9 | SE218617A.006 | LB223349 | 13 Apr 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 |
| QC1 | SE218617A.007 | LB223349 | 13 Apr 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 |
| QC1A | SE218617A.008 | LB223349 | 13 Apr 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 | 10 Oct 2021 | 26 Apr 2021 |

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

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

No surrogates were re=uired for this job.

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.

**Trace Metals (Dissolved) in Water by ICPMS** — **Method: ME-(AU)-[ENV]AN318**

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB223349.001 | Aluminium, Al | µg/L | 5 | <5 |

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula" RPD | qOriginalResult - ReplicateResult qx 100 / Mean

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

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

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

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

No duplicates were re=uired for this job.

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.

**Trace Metals (Dissolved) in Water by ICPMS** — **Method: ME-(AU)-[ENV]AN318**

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB223349.002 | Aluminium, Al | µg/L | 5 | 21 | 20 | 80 - 120 | 106 |

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

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

No matrix spikes were re=uired for this job.

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula" RPD | qOriginalResult - ReplicateResult qx 100 / Mean

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

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

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

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

No matrix spike duplicates were re=uired 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 re=uest or alternatively can be found here" https"//www.sgs.com.au/~/media/Local/Australia/Documents/ Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

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

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# CHAIN OF CUSTODY & ANALYSIS REQUEST

**SGS Environmental Services Sydney**
**Unit 16, 33 Maddox Street**
**Alexandria NSW 2015**
**Facsimile No: (02) 85940499**
**Telephone No: (02) 85940400**
**Email:**
**au.samplereceipt.sydney@sgs.com**

**Sample Date:** 11/06/2021

| | | | |
|---|---|---|---|
| Company Name: | JM Environments | Project Name/No: | JME20005-6 |
| Address: | 37 Tooke St | Purchase Order No: | JME20005-6 |
| | COOKS HILL NSW 2300 | Results Required By: | Standard |
| Contact Name: | James McMahon | Email: | james@jmenvironments.com |
| Telephone | 0427 893 668 | Email: | |

| | | | |
|---|---|---|---|
| Relinquished by: J McMahon | Date /Time: 15/6/2021 4pm | Received by: | Date /Time: 16.6.21 11:35 |
| Relinquished by: | Date /Time: | Received by: | Date /Time: |
| Samples intact: (Yes)/No | Temperature: 5.0 °C | Sample Cooler Sealed: Yes/No | Laboratory Quotation: ENVI126319 |

| Lab Sample ID | Sample ID | Water | Soil | Other | Preservative | No. of Containers | | pH/CEC | BTEX/TPH/ PAH/ 8HM | 8HM | OCP/PCB | Asbestos | PFAS | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | HA1-3 | | x | | | 2 | | | X | | | | X | | | | | | |
| 2 | HA2-3 | | x | | | 2 | | | X | | x | | X | | | | | | |
| 3 | HA3-1 | | x | | | 1 | | | | | | | X | | | | | | |
| 4 | HA3-2 | | x | | | 1 | | | | | | | X | | | | | | |
| 5 | HA4-0 | | x | | | 1 | | | | | | | X | | | | | | |
| 6 | HA4-1 | | x | | | 1 | | | | | | | X | | | | | | |
| 7 | HA4-2 | | x | | | 1 | | | | | | | X | | | | | | |
| 8 | MW4 | X | | | | 4 | | | | x | | | X | | | | | | Low level PFAS |
| 9 | MW5 | X | | | | 4 | | | | x | | | X | | | | | | Low level PFAS |
| 10 | MW6 | X | | | | 4 | | | | x | | | X | | | | | | Low level PFAS |
| 11 | MW7 | X | | | | 4 | | | | x | | | X | | | | | | Low level PFAS |
| 12 | MW8 | X | | | | 3 | | | | x | | | X | | | | | | Low level PFAS |
| 13 | MW9 | X | | | | 4 | | | | x | | | X | | | | | | Low level PFAS |
| 14 | MW10 | X | | | | 4 | | | | x | | | X | | | | | | Low level PFAS |
| 15 | QC1 | | X | | | | | | x | | | | X | | | | | | |
| 16 | QC2 | x | | | | | | | | | | | X | | | | | | Low level PFAS |
| 17 | QCC | X | | | | | | | | | | | X | | | | | | Low level PFAS |
| 18 | QCD | X | | | | | | | | | | | X | | | | | | Low level PFAS |

SGS EHS Sydney COC

**SE220737**

# SAMPLE RECEIPT ADVICE

SE220737

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20005-6** |
| Order Number | **JME20005-6** |
| Samples | 18 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| Samples Received | Wed 16/6/2021 |
| Report Due | Wed 23/6/2021 |
| SGS Reference | **SE220737** |

## SUBMISSION DETAILS

This is to confirm that 18 samples were received on Wednesday 16/6/2021. Results are expected to be ready by COB Wednesday 23/6/2021.
Please quote SGS reference SE220737 when making enquiries. Refer below for details relating to sample integrity upon receipt.

| | | | |
|---|---|---|---|
| Samples clearly labelled | Yes | Complete documentation received | Yes |
| Sample container provider | SGS | Sample cooling method | Ice |
| Samples received in correct containers | Yes | Sample counts by matrix | 8 Soil, 10 Water |
| Date documentation received | 16/6/2021 | Type of documentation received | COC |
| Samples received in good order | Yes | Samples received without headspace | Yes |
| Sample temperature upon receipt | 5°C | Sufficient sample for analysis | Yes |
| Turnaround time requested | Standard | | |

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

## COMMENTS

PFAS subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420.

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# SAMPLE RECEIPT ADVICE

SE220737

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME20005-6

SUMMARY OF ANALYSIS

| No. | Sample ID | OC Pesticides in Soil | PAH (Polynuclear Aromatic Hydrocarbons) in Soil | PCBs in Soil | Total Recoverable Elements in Soil/Waste | TRH (Total Recoverable Hydrocarbons) in Soil | VOC's in Soil | Volatile Petroleum Hydrocarbons in Soil |
|---|---|---|---|---|---|---|---|---|
| 001 | HA1-3 | - | 26 | - | 7 | 10 | 11 | 7 |
| 002 | HA2-3 | 29 | 26 | 11 | 7 | 10 | 11 | 7 |
| 015 | QC1 | - | 26 | - | 7 | 10 | 11 | 7 |

CONTINUED OVERLEAF

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

# SAMPLE RECEIPT ADVICE

SE220737

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME20005-6

SUMMARY OF ANALYSIS

| No. | Sample ID | Mercury (dissolved) in Water | Mercury in Soil | Moisture Content | Per- and Polyfluoroalkyl Substances (PFAS) in | Trace Metals (Dissolved) in Water by ICPMS |
|---|---|---|---|---|---|---|
| 001 | HA1-3 | - | 1 | 1 | 56 | - |
| 002 | HA2-3 | - | 1 | 1 | 56 | - |
| 003 | HA3-1 | - | - | - | 56 | - |
| 004 | HA3-2 | - | - | - | 56 | - |
| 005 | HA4-0 | - | - | - | 56 | - |
| 006 | HA4-1 | - | - | - | 56 | - |
| 007 | HA4-2 | - | - | - | 56 | - |
| 008 | MW4 | 1 | - | - | - | 7 |
| 009 | MW5 | 1 | - | - | - | 7 |
| 010 | MW6 | 1 | - | - | - | 7 |
| 011 | MW7 | 1 | - | - | - | 7 |
| 012 | MW8 | 1 | - | - | - | 7 |
| 013 | MW9 | 1 | - | - | - | 7 |
| 014 | MW10 | 1 | - | - | - | 7 |
| 015 | QC1 | - | 1 | 1 | 56 | - |

CONTINUED OVERLEAF

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

# SAMPLE RECEIPT ADVICE

SE220737

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME20005-6

SUMMARY OF ANALYSIS

| No. | Sample ID | Per- and Polyfluoroalkyl Substances (PFAS) in |
|---|---|---|
| 008 | MW4 | 56 |
| 009 | MW5 | 56 |
| 010 | MW6 | 56 |
| 011 | MW7 | 56 |
| 012 | MW8 | 56 |
| 013 | MW9 | 56 |
| 014 | MW10 | 56 |
| 016 | QC2 | 56 |
| 017 | QCC | 56 |
| 018 | QCD | 56 |

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

# ANALYTICAL REPORT

Accreditation No. 2562

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20005-6** |
| Order Number | **JME20005-6** |
| Samples | 18 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE220737 R0** |
| Date Received | 16/6/2021 |
| Date Reported | 23/6/2021 |

## COMMENTS

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

PFAS subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420.

MA1523: Some surrogate recovery is outside of the acceptance criteria due to sample matrix interference.
MA1523: LCS recoveries were good for all compounds except PFTrDA.

## SIGNATORIES

**Akheeqar BENIAMEEN**
Chemist

**Dong LIANG**
Metals/Inorganics Team Leader

**Kamrul AHSAN**
Senior Chemist

**Ly Kim HA**
Organic Section Head

**Shane MCDERMOTT**
Inorganic/Metals Chemist

**Teresa NGUYEN**
Organic Chemist

## VOC's in Soil [AN433] Tested: 17/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Total Xylenes | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 |
| Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | <0.6 |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |

## Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 17/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 |
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C10 | mg/kg | 25 | <25 | <25 | <25 |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | <25 | <25 | <25 |

## TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 17/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 |
| TRH >C10-C16 | mg/kg | 25 | <25 | <25 | <25 |
| TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | <25 | <25 | <25 |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 |
| TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | <210 | <210 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 17/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| 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 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | **0.1** | **0.2** |
| Pyrene | mg/kg | 0.1 | <0.1 | **0.1** | **0.2** |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | **0.1** |
| Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(ghi)perylene | mg/kg | 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 |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 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 |
| Total PAH (18) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 |

## OC Pesticides in Soil [AN420] Tested: 17/6/2021

| PARAMETER | UOM | LOR | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 |
|---|---|---|---|
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 |
| Alpha BHC | mg/kg | 0.1 | <0.1 |
| Lindane | mg/kg | 0.1 | <0.1 |
| Heptachlor | mg/kg | 0.1 | <0.1 |
| Aldrin | mg/kg | 0.1 | <0.1 |
| Beta BHC | mg/kg | 0.1 | <0.1 |
| Delta BHC | mg/kg | 0.1 | <0.1 |
| Heptachlor epoxide | mg/kg | 0.1 | <0.1 |
| o,p'-DDE | mg/kg | 0.1 | <0.1 |
| Alpha Endosulfan | mg/kg | 0.2 | <0.2 |
| Gamma Chlordane | mg/kg | 0.1 | <0.1 |
| Alpha Chlordane | mg/kg | 0.1 | <0.1 |
| trans-Nonachlor | mg/kg | 0.1 | <0.1 |
| p,p'-DDE | mg/kg | 0.1 | <0.1 |
| Dieldrin | mg/kg | 0.2 | <0.2 |
| Endrin | mg/kg | 0.2 | <0.2 |
| o,p'-DDD | mg/kg | 0.1 | <0.1 |
| o,p'-DDT | mg/kg | 0.1 | <0.1 |
| Beta Endosulfan | mg/kg | 0.2 | <0.2 |
| p,p'-DDD | mg/kg | 0.1 | <0.1 |
| p,p'-DDT | mg/kg | 0.1 | <0.1 |
| Endosulfan sulphate | mg/kg | 0.1 | <0.1 |
| Endrin Aldehyde | mg/kg | 0.1 | <0.1 |
| Methoxychlor | mg/kg | 0.1 | <0.1 |
| Endrin Ketone | mg/kg | 0.1 | <0.1 |
| Isodrin | mg/kg | 0.1 | <0.1 |
| Mirex | mg/kg | 0.1 | <0.1 |
| Total CLP OC Pesticides | mg/kg | 1 | <1 |

## PCBs in Soil [AN420] Tested: 17/6/2021

| PARAMETER | UOM | LOR | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 |
|---|---|---|---|
| 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 | <1 |

## Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 21/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | **2** | <1 | <1 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | **8.0** | **2.9** | **3.1** |
| Copper, Cu | mg/kg | 0.5 | **7.6** | **2.4** | **2.5** |
| Lead, Pb | mg/kg | 1 | **8** | **4** | **3** |
| Nickel, Ni | mg/kg | 0.5 | **3.0** | **1.3** | **1.3** |
| Zinc, Zn | mg/kg | 2 | **150** | **100** | **95** |

## Mercury in Soil [AN312] Tested: 21/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 |

## Moisture Content [AN002] Tested: 21/6/2021

| PARAMETER | UOM | LOR | HA1-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.001 | HA2-3<br>SOIL<br>-<br>11/6/2021<br>SE220737.002 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | **7.3** | **5.1** | **6.9** |

## Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [MA-1523] Tested: 23/6/2021

| PARAMETER | UOM | LOR | HA1-3 SOIL - 11/6/2021 SE220737.001 | HA2-3 SOIL - 11/6/2021 SE220737.002 | HA3-1 SOIL - 11/6/2021 SE220737.003 | HA3-2 SOIL - 11/6/2021 SE220737.004 | HA4-0 SOIL - 11/6/2021 SE220737.005 |
|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 | <0.0032 |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 | <0.0016 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 | <0.016 | <0.016 |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 |
| Total of PFAS (n=30) | mg/kg | 0.08 | <0.08 | <0.08 | <0.08 | <0.08 | <0.08 |

## Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [MA-1523] Tested: 23/6/2021 (continued)

| PARAMETER | UOM | LOR | HA4-1<br>SOIL<br>-<br>11/6/2021<br>SE220737.006 | HA4-2<br>SOIL<br>-<br>11/6/2021<br>SE220737.007 | QC1<br>SOIL<br>-<br>11/6/2021<br>SE220737.015 |
|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentanoic acid (PFPeA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexanoic acid (PFHxA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctanoic Acid (PFOA) | mg/kg | 0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Perfluorononanoic acid (PFNA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecanoic acid (PFDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroundecanoic acid (PFUnA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecanoic acid (PFDoA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexadecanoic acid (PFHxDA) | mg/kg | 0.0032 | <0.0032 | <0.0032 | <0.0032 |
| Perfluorobutane sulfonate (PFBS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoropentane sulfonate (PFPeS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorohexane sulfonate (PFHxS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluoroheptane sulfonate (PFHpS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonate (PFOS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Sum PFOS and PFHXS | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorononane sulfonate (PFNS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorodecane sulfonate (PFDS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorododecane sulfonate (PFDoS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| Perfluorooctane sulfonamide (PFOSA) | mg/kg | 0.0016 | <0.0016 | <0.0016 | <0.0016 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | mg/kg | 0.016 | <0.016 | <0.016 | <0.016 |
| N-Methylperfluorooctanesulfonamidoacetic acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | mg/kg | 0.008 | <0.008 | <0.008 | <0.008 |
| Total of PFAS (n=30) | mg/kg | 0.08 | <0.08 | <0.08 | <0.08 |

## Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 18/6/2021

| PARAMETER | UOM | LOR | MW4 WATER - 11/6/2021 SE220737.008 | MW5 WATER - 11/6/2021 SE220737.009 | MW6 WATER - 11/6/2021 SE220737.010 | MW7 WATER - 11/6/2021 SE220737.011 | MW8 WATER - 11/6/2021 SE220737.012 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | µg/L | 1 | 1 | <1 | <1 | <1 | <1 |
| Cadmium, Cd | µg/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Copper, Cu | µg/L | 1 | 1 | <1 | 1 | <1 | 1 |
| Chromium, Cr | µg/L | 1 | 2 | 3 | 8 | 3 | 2 |
| Nickel, Ni | µg/L | 1 | <1 | <1 | <1 | <1 | <1 |
| Lead, Pb | µg/L | 1 | <1 | <1 | <1 | <1 | <1 |
| Zinc, Zn | µg/L | 5 | 12 | 17 | <5 | 5 | <5 |

| PARAMETER | UOM | LOR | MW9 WATER - 11/6/2021 SE220737.013 | MW10 WATER - 11/6/2021 SE220737.014 |
|---|---|---|---|---|
| Arsenic, As | µg/L | 1 | <1 | <1 |
| Cadmium, Cd | µg/L | 0.1 | <0.1 | <0.1 |
| Copper, Cu | µg/L | 1 | <1 | <1 |
| Chromium, Cr | µg/L | 1 | 3 | 3 |
| Nickel, Ni | µg/L | 1 | <1 | <1 |
| Lead, Pb | µg/L | 1 | <1 | <1 |
| Zinc, Zn | µg/L | 5 | <5 | 220 |

## Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 17/6/2021

| PARAMETER | UOM | LOR | MW4 WATER - 11/6/2021 SE220737.008 | MW5 WATER - 11/6/2021 SE220737.009 | MW6 WATER - 11/6/2021 SE220737.010 | MW7 WATER - 11/6/2021 SE220737.011 | MW8 WATER - 11/6/2021 SE220737.012 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/L | 0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |

| PARAMETER | UOM | LOR | MW9 WATER - 11/6/2021 SE220737.013 | MW10 WATER - 11/6/2021 SE220737.014 |
|---|---|---|---|---|
| Mercury | mg/L | 0.0001 | <0.0001 | <0.0001 |

## Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level [MA-1523] Tested: 23/6/2021

| PARAMETER | UOM | LOR | MW4 WATER - 11/6/2021 SE220737.008 | MW5 WATER - 11/6/2021 SE220737.009 | MW6 WATER - 11/6/2021 SE220737.010 | MW7 WATER - 11/6/2021 SE220737.011 | MW8 WATER - 11/6/2021 SE220737.012 |
|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | µg/L | 0.0005 | **0.035** | **0.0066** | <0.0005 | **0.0014** | **0.0005** |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.0005 | **0.014** | **0.0030** | <0.0005 | **0.0025** | <0.0005 |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.0005 | **0.016** | **0.0065** | **0.0005** | **0.0022** | **0.0007** |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.0005 | **0.0081** | **0.0044** | **0.0006** | **0.0011** | **0.0005** |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.0005 | **0.016** | **0.012** | <0.0005 | **0.0018** | **0.010** |
| Perfluorononanoic acid (PFNA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.001 | **0.002** | **0.001** | <0.001 | **0.003** | **0.001** |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.001 | **0.002** | <0.001 | <0.001 | **0.001** | <0.001 |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.0002 | **0.068** | **0.027** | <0.0002 | **0.021** | **0.026** |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.0002 | **0.0003** | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.0002 | **0.016** | **0.0071** | <0.0002 | **0.0081** | **0.011** |
| Sum of PFHxS and PFOS | µg/L | 0.0002 | **0.084** | **0.034** | <0.0002 | **0.029** | **0.037** |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| Total PFAS (n=30) | µg/L | 0.006 | **0.18** | **0.067** | <0.0060 | **0.042** | **0.050** |

## Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level [MA-1523] Tested: 23/6/2021

| PARAMETER | UOM | LOR | MW9 WATER - 11/6/2021 SE220737.013 | MW10 WATER - 11/6/2021 SE220737.014 | QC2 WATER - 11/6/2021 SE220737.016 | QCC WATER - 11/6/2021 SE220737.017 | QCD WATER - 11/6/2021 SE220737.018 |
|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | µg/L | 0.0005 | **0.0006** | **0.0097** | **0.033** | **0.0011** | **0.0013** |
| Perfluoropentanoic acid (PFPeA) | µg/L | 0.0005 | <0.0005 | **0.0026** | **0.013** | **0.0016** | **0.0016** |
| Perfluorohexanoic acid (PFHxA) | µg/L | 0.0005 | <0.0005 | **0.0054** | **0.014** | **0.0010** | **0.0010** |
| Perfluoroheptanoic acid (PFHpA) | µg/L | 0.0005 | <0.0005 | **0.0018** | **0.0086** | **0.0006** | <0.0005 |
| Perfluorooctanoic Acid (PFOA) | µg/L | 0.0005 | <0.0005 | **0.018** | **0.017** | **0.0005** | **0.0012** |
| Perfluorononanoic acid (PFNA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorodecanoic acid (PFDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluoroundecanoic acid (PFUnA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorododecanoic acid (PFDoA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluorohexadecanoic acid (PFHxDA) | µg/L | 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorobutane sulfonate (PFBS) | µg/L | 0.001 | <0.001 | **0.001** | **0.002** | <0.001 | <0.001 |
| Perfluoropentane sulfonate (PFPeS) | µg/L | 0.001 | <0.001 | **0.001** | **0.002** | <0.001 | <0.001 |
| Perfluorohexane sulfonate (PFHxS) | µg/L | 0.0002 | **0.0005** | **0.034** | **0.058** | **0.0017** | **0.0014** |
| Perfluoroheptane sulfonate (PFHpS) | µg/L | 0.0002 | <0.0002 | **0.0008** | **0.0003** | <0.0002 | <0.0002 |
| Perfluorooctane sulfonate (PFOS) | µg/L | 0.0002 | **0.0007** | **0.026** | **0.020** | **0.0017** | **0.0018** |
| Sum of PFHxS and PFOS | µg/L | 0.0002 | **0.0012** | **0.061** | **0.079** | **0.0034** | **0.0033** |
| Perfluorononane sulfonate (PFNS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorodecane sulfonate (PFDS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorododecane sulfonate (PFDoS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) | µg/L | 0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Perfluorooctane sulfonamide (PFOSA) | µg/L | 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| N-Methylperfluorooctane sulfonamide (N-MeFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctane sulfonamide (N-EtFOSA) | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| 2-(N-Methylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| 2-(N-Ethylperfluorooctane sulfonamido)-ethanol | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Methylperfluorooctanesulfonamidoacetic acid | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| N-Ethylperfluorooctanesulfonamidoacetic Acid | µg/L | 0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| Total PFAS (n=30) | µg/L | 0.006 | <0.0060 | **0.10** | **0.17** | **0.0082** | **0.0083** |

| 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 ASS 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). |
| 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. |
| MA-1523 | This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts, determined as the total of linear and branched isomers. After spiking with isotopically labelled quantification surrogates and clean-up via SPE cartridges sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification. |

FOOTNOTES

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

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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law .

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# STATEMENT OF QA/QC PERFORMANCE

**SE220737 R0**

## CLIENT DETAILS

| | |
|---|---|
| Contact | James McMahon |
| Client | JM ENVIRONMENTS |
| Address | 37 TOOKE STREET<br>COOKS HILL NSW 2300 |
| Telephone | 0427 893 668 |
| Facsimile | (Not specified) |
| Email | james@jmenvironments.com |
| Project | **JME20005-6** |
| Order Number | **JME20005-6** |
| Samples | 18 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Huong Crawford |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE220737 R0** |
| Date Received | 16 Jun 2021 |
| Date Reported | 23 Jun 2021 |

## 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 | 13 items |
| | Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES | 5 items |
| | TRH (Total Recoverable Hydrocarbons) in Soil | 5 items |

## SAMPLE SUMMARY

# HOLDING TIME SUMMARY

SE220737 R0

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

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

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

## 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 |
|---|---|---|---|---|---|---|---|---|
| MW4 | SE220737.008 | LB226913 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 17 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 |
| MW5 | SE220737.009 | LB226913 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 17 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 |
| MW6 | SE220737.010 | LB226913 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 17 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 |
| MW7 | SE220737.011 | LB226913 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 17 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 |
| MW8 | SE220737.012 | LB226913 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 17 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 |
| MW9 | SE220737.013 | LB226913 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 17 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 |
| MW10 | SE220737.014 | LB226913 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 17 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 |

## Mercury in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB227223 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 | 09 Jul 2021 | 23 Jun 2021 |
| HA2-3 | SE220737.002 | LB227223 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 | 09 Jul 2021 | 23 Jun 2021 |
| QC1 | SE220737.015 | LB227223 | 11 Jun 2021 | 16 Jun 2021 | 09 Jul 2021 | 21 Jun 2021 | 09 Jul 2021 | 23 Jun 2021 |

## Moisture Content

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB227109 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 21 Jun 2021 | 26 Jun 2021 | 22 Jun 2021 |
| HA2-3 | SE220737.002 | LB227109 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 21 Jun 2021 | 26 Jun 2021 | 22 Jun 2021 |
| QC1 | SE220737.015 | LB227109 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 21 Jun 2021 | 26 Jun 2021 | 22 Jun 2021 |

## OC Pesticides in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| HA2-3 | SE220737.002 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| QC1 | SE220737.015 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| HA2-3 | SE220737.002 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| QC1 | SE220737.015 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |

## PCBs in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| HA2-3 | SE220737.002 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| QC1 | SE220737.015 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |

## 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 |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB227222 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 | 08 Dec 2021 | 23 Jun 2021 |
| HA2-3 | SE220737.002 | LB227222 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 | 08 Dec 2021 | 23 Jun 2021 |
| QC1 | SE220737.015 | LB227222 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 | 08 Dec 2021 | 23 Jun 2021 |

## 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 |
|---|---|---|---|---|---|---|---|---|
| MW4 | SE220737.008 | LB227006 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 18 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 |
| MW5 | SE220737.009 | LB227006 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 18 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 |
| MW6 | SE220737.010 | LB227006 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 18 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 |
| MW7 | SE220737.011 | LB227006 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 18 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 |
| MW8 | SE220737.012 | LB227006 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 18 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 |
| MW9 | SE220737.013 | LB227006 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 18 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 |
| MW10 | SE220737.014 | LB227006 | 11 Jun 2021 | 16 Jun 2021 | 08 Dec 2021 | 18 Jun 2021 | 08 Dec 2021 | 21 Jun 2021 |

## TRH (Total Recoverable Hydrocarbons) in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| HA2-3 | SE220737.002 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| QC1 | SE220737.015 | LB226970 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |

## VOC's in Soil

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB226974 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| HA2-3 | SE220737.002 | LB226974 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |

# HOLDING TIME SUMMARY

SE220737 R0

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

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

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

**VOC's in Soil (continued)** — Method: ME-(AU)-[ENV]AN433

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| QC1 | SE220737.015 | LB226974 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |

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

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|---|---|---|---|---|---|---|---|---|
| HA1-3 | SE220737.001 | LB226974 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| HA2-3 | SE220737.002 | LB226974 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |
| QC1 | SE220737.015 | LB226974 | 11 Jun 2021 | 16 Jun 2021 | 25 Jun 2021 | 17 Jun 2021 | 27 Jul 2021 | 22 Jun 2021 |

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

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

### OC Pesticides in Soil

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Tetrachloro-m-xylene (TCMX) (Surrogate) | HA2-3 | SE220737.002 | % | 60 - 130% | 101 |

### PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| 2-fluorobiphenyl (Surrogate) | HA1-3 | SE220737.001 | % | 70 - 130% | 90 |
| | HA2-3 | SE220737.002 | % | 70 - 130% | 90 |
| | QC1 | SE220737.015 | % | 70 - 130% | 96 |
| d14-p-terphenyl (Surrogate) | HA1-3 | SE220737.001 | % | 70 - 130% | 94 |
| | HA2-3 | SE220737.002 | % | 70 - 130% | 94 |
| | QC1 | SE220737.015 | % | 70 - 130% | 94 |
| d5-nitrobenzene (Surrogate) | HA1-3 | SE220737.001 | % | 70 - 130% | 98 |
| | HA2-3 | SE220737.002 | % | 70 - 130% | 96 |
| | QC1 | SE220737.015 | % | 70 - 130% | 100 |

### PCBs in Soil

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Tetrachloro-m-xylene (TCMX) (Surrogate) | HA2-3 | SE220737.002 | % | 60 - 130% | 101 |

### Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level

Method: MA-1523

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 91 |
| | MW5 | SE220737.009 | % | 10 - 150% | 65 |
| | MW6 | SE220737.010 | % | 10 - 150% | 89 |
| | MW7 | SE220737.011 | % | 10 - 150% | 91 |
| | MW8 | SE220737.012 | % | 10 - 150% | 93 |
| | MW9 | SE220737.013 | % | 10 - 150% | 108 |
| | MW10 | SE220737.014 | % | 10 - 150% | 77 |
| | QC2 | SE220737.016 | % | 10 - 150% | 101 |
| | QCC | SE220737.017 | % | 10 - 150% | 91 |
| | QCD | SE220737.018 | % | 10 - 150% | 86 |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 42 |
| | MW5 | SE220737.009 | % | 10 - 150% | 44 |
| | MW6 | SE220737.010 | % | 10 - 150% | 44 |
| | MW7 | SE220737.011 | % | 10 - 150% | 54 |
| | MW8 | SE220737.012 | % | 10 - 150% | 56 |
| | MW9 | SE220737.013 | % | 10 - 150% | 42 |
| | MW10 | SE220737.014 | % | 10 - 150% | 50 |
| | QC2 | SE220737.016 | % | 10 - 150% | 40 |
| | QCC | SE220737.017 | % | 10 - 150% | 45 |
| | QCD | SE220737.018 | % | 10 - 150% | 49 |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 99 |
| | MW5 | SE220737.009 | % | 10 - 150% | 91 |
| | MW6 | SE220737.010 | % | 10 - 150% | 84 |
| | MW7 | SE220737.011 | % | 10 - 150% | 120 |
| | MW8 | SE220737.012 | % | 10 - 150% | 118 |
| | MW9 | SE220737.013 | % | 10 - 150% | 83 |
| | MW10 | SE220737.014 | % | 10 - 150% | 109 |
| | QC2 | SE220737.016 | % | 10 - 150% | 98 |
| | QCC | SE220737.017 | % | 10 - 150% | 92 |
| | QCD | SE220737.018 | % | 10 - 150% | 95 |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 81 |
| | MW5 | SE220737.009 | % | 10 - 150% | 84 |
| | MW6 | SE220737.010 | % | 10 - 150% | 77 |
| | MW7 | SE220737.011 | % | 10 - 150% | 89 |
| | MW8 | SE220737.012 | % | 10 - 150% | 86 |
| | MW9 | SE220737.013 | % | 10 - 150% | 70 |
| | MW10 | SE220737.014 | % | 10 - 150% | 113 |
| | QC2 | SE220737.016 | % | 10 - 150% | 89 |
| | QCC | SE220737.017 | % | 10 - 150% | 80 |
| | QCD | SE220737.018 | % | 10 - 150% | 84 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level (continued)** **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C2-PFDoA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 95 |
| | MW5 | SE220737.009 | % | 10 - 150% | 81 |
| | MW6 | SE220737.010 | % | 10 - 150% | 86 |
| | MW7 | SE220737.011 | % | 10 - 150% | 90 |
| | MW8 | SE220737.012 | % | 10 - 150% | 98 |
| | MW9 | SE220737.013 | % | 10 - 150% | 101 |
| | MW10 | SE220737.014 | % | 10 - 150% | 77 |
| | QC2 | SE220737.016 | % | 10 - 150% | 87 |
| | QCC | SE220737.017 | % | 10 - 150% | 90 |
| | QCD | SE220737.018 | % | 10 - 150% | 80 |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 125 |
| | MW5 | SE220737.009 | % | 10 - 150% | 88 |
| | MW6 | SE220737.010 | % | 10 - 150% | 110 |
| | MW7 | SE220737.011 | % | 10 - 150% | 125 |
| | MW8 | SE220737.012 | % | 10 - 150% | 121 |
| | MW9 | SE220737.013 | % | 10 - 150% | 115 |
| | MW10 | SE220737.014 | % | 10 - 150% | 120 |
| | QC2 | SE220737.016 | % | 10 - 150% | 148 |
| | QCC | SE220737.017 | % | 10 - 150% | 116 |
| | QCD | SE220737.018 | % | 10 - 150% | 111 |
| (13C3-PFBS) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 48 |
| | MW5 | SE220737.009 | % | 10 - 150% | 57 |
| | MW6 | SE220737.010 | % | 10 - 150% | 51 |
| | MW7 | SE220737.011 | % | 10 - 150% | 54 |
| | MW8 | SE220737.012 | % | 10 - 150% | 52 |
| | MW9 | SE220737.013 | % | 10 - 150% | 47 |
| | MW10 | SE220737.014 | % | 10 - 150% | 49 |
| | QC2 | SE220737.016 | % | 10 - 150% | 44 |
| | QCC | SE220737.017 | % | 10 - 150% | 51 |
| | QCD | SE220737.018 | % | 10 - 150% | 58 |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 96 |
| | MW5 | SE220737.009 | % | 10 - 150% | 90 |
| | MW6 | SE220737.010 | % | 10 - 150% | 98 |
| | MW7 | SE220737.011 | % | 10 - 150% | 99 |
| | MW8 | SE220737.012 | % | 10 - 150% | 101 |
| | MW9 | SE220737.013 | % | 10 - 150% | 90 |
| | MW10 | SE220737.014 | % | 10 - 150% | 95 |
| | QC2 | SE220737.016 | % | 10 - 150% | 95 |
| | QCC | SE220737.017 | % | 10 - 150% | 113 |
| | QCD | SE220737.018 | % | 10 - 150% | 102 |
| (13C4_PFOA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 106 |
| | MW5 | SE220737.009 | % | 10 - 150% | 103 |
| | MW6 | SE220737.010 | % | 10 - 150% | 106 |
| | MW7 | SE220737.011 | % | 10 - 150% | 105 |
| | MW8 | SE220737.012 | % | 10 - 150% | 97 |
| | MW9 | SE220737.013 | % | 10 - 150% | 93 |
| | MW10 | SE220737.014 | % | 10 - 150% | 94 |
| | QC2 | SE220737.016 | % | 10 - 150% | 107 |
| | QCC | SE220737.017 | % | 10 - 150% | 101 |
| | QCD | SE220737.018 | % | 10 - 150% | 103 |
| (13C4-PFBA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 101 |
| | MW5 | SE220737.009 | % | 10 - 150% | 100 |
| | MW6 | SE220737.010 | % | 10 - 150% | 101 |
| | MW7 | SE220737.011 | % | 10 - 150% | 99 |
| | MW8 | SE220737.012 | % | 10 - 150% | 102 |
| | MW9 | SE220737.013 | % | 10 - 150% | 100 |
| | MW10 | SE220737.014 | % | 10 - 150% | 101 |
| | QC2 | SE220737.016 | % | 10 - 150% | 100 |
| | QCC | SE220737.017 | % | 10 - 150% | 100 |
| | QCD | SE220737.018 | % | 10 - 150% | 100 |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 87 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level (continued)** **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C4-PFHpA) Isotopically Labelled Internal Recovery Standard | MW5 | SE220737.009 | % | 10 - 150% | 95 |
| | MW6 | SE220737.010 | % | 10 - 150% | 85 |
| | MW7 | SE220737.011 | % | 10 - 150% | 90 |
| | MW8 | SE220737.012 | % | 10 - 150% | 81 |
| | MW9 | SE220737.013 | % | 10 - 150% | 82 |
| | MW10 | SE220737.014 | % | 10 - 150% | 77 |
| | QC2 | SE220737.016 | % | 10 - 150% | 80 |
| | QCC | SE220737.017 | % | 10 - 150% | 79 |
| | QCD | SE220737.018 | % | 10 - 150% | 92 |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 61 |
| | MW5 | SE220737.009 | % | 10 - 150% | 65 |
| | MW6 | SE220737.010 | % | 10 - 150% | 61 |
| | MW7 | SE220737.011 | % | 10 - 150% | 60 |
| | MW8 | SE220737.012 | % | 10 - 150% | 57 |
| | MW9 | SE220737.013 | % | 10 - 150% | 58 |
| | MW10 | SE220737.014 | % | 10 - 150% | 57 |
| | QC2 | SE220737.016 | % | 10 - 150% | 57 |
| | QCC | SE220737.017 | % | 10 - 150% | 57 |
| | QCD | SE220737.018 | % | 10 - 150% | 59 |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 86 |
| | MW5 | SE220737.009 | % | 10 - 150% | 85 |
| | MW6 | SE220737.010 | % | 10 - 150% | 77 |
| | MW7 | SE220737.011 | % | 10 - 150% | 80 |
| | MW8 | SE220737.012 | % | 10 - 150% | 74 |
| | MW9 | SE220737.013 | % | 10 - 150% | 78 |
| | MW10 | SE220737.014 | % | 10 - 150% | 79 |
| | QC2 | SE220737.016 | % | 10 - 150% | 83 |
| | QCC | SE220737.017 | % | 10 - 150% | 77 |
| | QCD | SE220737.018 | % | 10 - 150% | 76 |
| (13C6-PFDA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 101 |
| | MW5 | SE220737.009 | % | 10 - 150% | 80 |
| | MW6 | SE220737.010 | % | 10 - 150% | 104 |
| | MW7 | SE220737.011 | % | 10 - 150% | 102 |
| | MW8 | SE220737.012 | % | 10 - 150% | 111 |
| | MW9 | SE220737.013 | % | 10 - 150% | 99 |
| | MW10 | SE220737.014 | % | 10 - 150% | 91 |
| | QC2 | SE220737.016 | % | 10 - 150% | 93 |
| | QCC | SE220737.017 | % | 10 - 150% | 98 |
| | QCD | SE220737.018 | % | 10 - 150% | 87 |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 87 |
| | MW5 | SE220737.009 | % | 10 - 150% | 91 |
| | MW6 | SE220737.010 | % | 10 - 150% | 90 |
| | MW7 | SE220737.011 | % | 10 - 150% | 92 |
| | MW8 | SE220737.012 | % | 10 - 150% | 93 |
| | MW9 | SE220737.013 | % | 10 - 150% | 91 |
| | MW10 | SE220737.014 | % | 10 - 150% | 82 |
| | QC2 | SE220737.016 | % | 10 - 150% | 90 |
| | QCC | SE220737.017 | % | 10 - 150% | 96 |
| | QCD | SE220737.018 | % | 10 - 150% | 95 |
| (13C8-PFOS) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 112 |
| | MW5 | SE220737.009 | % | 10 - 150% | 121 |
| | MW6 | SE220737.010 | % | 10 - 150% | 95 |
| | MW7 | SE220737.011 | % | 10 - 150% | 102 |
| | MW8 | SE220737.012 | % | 10 - 150% | 94 |
| | MW9 | SE220737.013 | % | 10 - 150% | 93 |
| | MW10 | SE220737.014 | % | 10 - 150% | 98 |
| | QC2 | SE220737.016 | % | 10 - 150% | 90 |
| | QCC | SE220737.017 | % | 10 - 150% | 108 |
| | QCD | SE220737.018 | % | 10 - 150% | 96 |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 72 |
| | MW5 | SE220737.009 | % | 10 - 150% | 75 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level (continued)** **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C8-PFOSA) Isotopically Labelled Internal Recovery Standard | MW6 | SE220737.010 | % | 10 - 150% | 60 |
| | MW7 | SE220737.011 | % | 10 - 150% | 77 |
| | MW8 | SE220737.012 | % | 10 - 150% | 61 |
| | MW9 | SE220737.013 | % | 10 - 150% | 70 |
| | MW10 | SE220737.014 | % | 10 - 150% | 64 |
| | QC2 | SE220737.016 | % | 10 - 150% | 76 |
| | QCC | SE220737.017 | % | 10 - 150% | 69 |
| | QCD | SE220737.018 | % | 10 - 150% | 62 |
| (13C9-PFNA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 107 |
| | MW5 | SE220737.009 | % | 10 - 150% | 108 |
| | MW6 | SE220737.010 | % | 10 - 150% | 97 |
| | MW7 | SE220737.011 | % | 10 - 150% | 86 |
| | MW8 | SE220737.012 | % | 10 - 150% | 97 |
| | MW9 | SE220737.013 | % | 10 - 150% | 94 |
| | MW10 | SE220737.014 | % | 10 - 150% | 102 |
| | QC2 | SE220737.016 | % | 10 - 150% | 101 |
| | QCC | SE220737.017 | % | 10 - 150% | 95 |
| | QCD | SE220737.018 | % | 10 - 150% | 92 |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 69 |
| | MW5 | SE220737.009 | % | 10 - 150% | 62 |
| | MW6 | SE220737.010 | % | 10 - 150% | 64 |
| | MW7 | SE220737.011 | % | 10 - 150% | 66 |
| | MW8 | SE220737.012 | % | 10 - 150% | 53 |
| | MW9 | SE220737.013 | % | 10 - 150% | 65 |
| | MW10 | SE220737.014 | % | 10 - 150% | 51 |
| | QC2 | SE220737.016 | % | 10 - 150% | 63 |
| | QCC | SE220737.017 | % | 10 - 150% | 63 |
| | QCD | SE220737.018 | % | 10 - 150% | 70 |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 72 |
| | MW5 | SE220737.009 | % | 10 - 150% | 57 |
| | MW6 | SE220737.010 | % | 10 - 150% | 63 |
| | MW7 | SE220737.011 | % | 10 - 150% | 72 |
| | MW8 | SE220737.012 | % | 10 - 150% | 58 |
| | MW9 | SE220737.013 | % | 10 - 150% | 64 |
| | MW10 | SE220737.014 | % | 10 - 150% | 70 |
| | QC2 | SE220737.016 | % | 10 - 150% | 66 |
| | QCC | SE220737.017 | % | 10 - 150% | 55 |
| | QCD | SE220737.018 | % | 10 - 150% | 61 |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 61 |
| | MW5 | SE220737.009 | % | 10 - 150% | 55 |
| | MW6 | SE220737.010 | % | 10 - 150% | 55 |
| | MW7 | SE220737.011 | % | 10 - 150% | 66 |
| | MW8 | SE220737.012 | % | 10 - 150% | 61 |
| | MW9 | SE220737.013 | % | 10 - 150% | 67 |
| | MW10 | SE220737.014 | % | 10 - 150% | 49 |
| | QC2 | SE220737.016 | % | 10 - 150% | 61 |
| | QCC | SE220737.017 | % | 10 - 150% | 65 |
| | QCD | SE220737.018 | % | 10 - 150% | 63 |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 78 |
| | MW5 | SE220737.009 | % | 10 - 150% | 47 |
| | MW6 | SE220737.010 | % | 10 - 150% | 59 |
| | MW7 | SE220737.011 | % | 10 - 150% | 73 |
| | MW8 | SE220737.012 | % | 10 - 150% | 77 |
| | MW9 | SE220737.013 | % | 10 - 150% | 55 |
| | MW10 | SE220737.014 | % | 10 - 150% | 76 |
| | QC2 | SE220737.016 | % | 10 - 150% | 75 |
| | QCC | SE220737.017 | % | 10 - 150% | 71 |
| | QCD | SE220737.018 | % | 10 - 150% | 59 |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 53 |
| | MW5 | SE220737.009 | % | 10 - 150% | 57 |
| | MW6 | SE220737.010 | % | 10 - 150% | 46 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples - Low Level (continued)** — Method: MA-1523

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard | MW7 | SE220737.011 | % | 10 - 150% | 58 |
| | MW8 | SE220737.012 | % | 10 - 150% | 46 |
| | MW9 | SE220737.013 | % | 10 - 150% | 60 |
| | MW10 | SE220737.014 | % | 10 - 150% | 50 |
| | QC2 | SE220737.016 | % | 10 - 150% | 54 |
| | QCC | SE220737.017 | % | 10 - 150% | 51 |
| | QCD | SE220737.018 | % | 10 - 150% | 49 |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard | MW4 | SE220737.008 | % | 10 - 150% | 54 |
| | MW5 | SE220737.009 | % | 10 - 150% | 62 |
| | MW6 | SE220737.010 | % | 10 - 150% | 44 |
| | MW7 | SE220737.011 | % | 10 - 150% | 54 |
| | MW8 | SE220737.012 | % | 10 - 150% | 49 |
| | MW9 | SE220737.013 | % | 10 - 150% | 56 |
| | MW10 | SE220737.014 | % | 10 - 150% | 45 |
| | QC2 | SE220737.016 | % | 10 - 150% | 50 |
| | QCC | SE220737.017 | % | 10 - 150% | 48 |
| | QCD | SE220737.018 | % | 10 - 150% | 51 |

**Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples** — Method: MA-1523

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 130% | 69 |
| | HA2-3 | SE220737.002 | % | 0 - 130% | 84 |
| | HA3-1 | SE220737.003 | % | 0 - 130% | 63 |
| | HA3-2 | SE220737.004 | % | 0 - 130% | 55 |
| | HA4-0 | SE220737.005 | % | 0 - 130% | 49 |
| | HA4-1 | SE220737.006 | % | 0 - 130% | 55 |
| | HA4-2 | SE220737.007 | % | 0 - 130% | 49 |
| | QC1 | SE220737.015 | % | 0 - 130% | 38 |
| (13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 87 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 79 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 79 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 87 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 82 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 86 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 81 |
| | QC1 | SE220737.015 | % | 0 - 150% | 91 |
| (13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 90 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 79 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 82 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 83 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 85 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 81 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 79 |
| | QC1 | SE220737.015 | % | 0 - 150% | 90 |
| (13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 98 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 81 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 70 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 74 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 74 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 72 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 69 |
| | QC1 | SE220737.015 | % | 0 - 150% | 78 |
| (13C2-PFDoA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 107 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 101 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 80 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 87 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 85 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 85 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 90 |
| | QC1 | SE220737.015 | % | 0 - 150% | 79 |
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 36 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)** **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard | HA2-3 | SE220737.002 | % | 0 - 150% | 38 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 33 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 38 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 27 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 24 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 22 |
| | QC1 | SE220737.015 | % | 0 - 150% | 15 |
| (13C3-PFBS) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 83 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 77 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 83 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 89 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 90 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 84 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 82 |
| | QC1 | SE220737.015 | % | 0 - 150% | 91 |
| (13C3-PFHxS) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 101 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 102 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 99 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 88 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 105 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 91 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 104 |
| | QC1 | SE220737.015 | % | 0 - 150% | 104 |
| (13C4_PFOA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 95 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 103 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 101 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 106 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 99 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 103 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 102 |
| | QC1 | SE220737.015 | % | 0 - 150% | 104 |
| (13C4-PFBA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 100 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 102 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 101 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 101 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 100 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 101 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 99 |
| | QC1 | SE220737.015 | % | 0 - 150% | 103 |
| (13C4-PFHpA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 93 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 96 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 98 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 106 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 96 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 100 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 96 |
| | QC1 | SE220737.015 | % | 0 - 150% | 102 |
| (13C5-PFHxA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 90 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 92 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 95 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 104 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 92 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 103 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 96 |
| | QC1 | SE220737.015 | % | 0 - 150% | 102 |
| (13C5-PFPeA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 102 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 105 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 101 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 102 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 108 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 105 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)** **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (13C5-PFPeA) Isotopically Labelled Internal Recovery Standard | HA4-2 | SE220737.007 | % | 0 - 150% | 104 |
| | QC1 | SE220737.015 | % | 0 - 150% | 105 |
| (13C6-PFDA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 112 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 93 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 104 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 108 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 111 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 82 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 110 |
| | QC1 | SE220737.015 | % | 0 - 150% | 98 |
| (13C7-PFUdA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 112 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 114 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 99 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 105 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 111 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 97 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 115 |
| | QC1 | SE220737.015 | % | 0 - 150% | 95 |
| (13C8-PFOS) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 105 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 96 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 99 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 87 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 101 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 94 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 101 |
| | QC1 | SE220737.015 | % | 0 - 150% | 108 |
| (13C8-PFOSA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 52 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 44 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 71 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 53 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 66 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 60 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 60 |
| | QC1 | SE220737.015 | % | 0 - 150% | 50 |
| (13C9-PFNA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 101 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 102 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 94 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 93 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 105 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 97 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 100 |
| | QC1 | SE220737.015 | % | 0 - 150% | 95 |
| (D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 45 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 39 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 53 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 49 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 59 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 50 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 47 |
| | QC1 | SE220737.015 | % | 0 - 150% | 45 |
| (D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 57 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 57 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 64 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 59 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 61 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 69 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 56 |
| | QC1 | SE220737.015 | % | 0 - 150% | 56 |
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 34 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 31 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 50 |

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

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

**Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)** — **Method: MA-1523**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| (D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard | HA3-2 | SE220737.004 | % | 0 - 150% | 45 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 52 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 44 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 38 |
| | QC1 | SE220737.015 | % | 0 - 150% | 39 |
| (D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 56 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 50 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 54 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 55 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 57 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 62 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 59 |
| | QC1 | SE220737.015 | % | 0 - 150% | 57 |
| (D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 42 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 36 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 56 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 45 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 58 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 56 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 51 |
| | QC1 | SE220737.015 | % | 0 - 150% | 42 |
| (D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard | HA1-3 | SE220737.001 | % | 0 - 150% | 40 |
| | HA2-3 | SE220737.002 | % | 0 - 150% | 35 |
| | HA3-1 | SE220737.003 | % | 0 - 150% | 54 |
| | HA3-2 | SE220737.004 | % | 0 - 150% | 47 |
| | HA4-0 | SE220737.005 | % | 0 - 150% | 58 |
| | HA4-1 | SE220737.006 | % | 0 - 150% | 51 |
| | HA4-2 | SE220737.007 | % | 0 - 150% | 47 |
| | QC1 | SE220737.015 | % | 0 - 150% | 43 |

**VOC's in Soil** — **Method: ME-(AU)-[ENV]AN433**

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Bromofluorobenzene (Surrogate) | HA1-3 | SE220737.001 | % | 60 - 130% | 81 |
| | HA2-3 | SE220737.002 | % | 60 - 130% | 92 |
| | QC1 | SE220737.015 | % | 60 - 130% | 80 |
| d4-1,2-dichloroethane (Surrogate) | HA1-3 | SE220737.001 | % | 60 - 130% | 85 |
| | HA2-3 | SE220737.002 | % | 60 - 130% | 89 |
| | QC1 | SE220737.015 | % | 60 - 130% | 91 |
| d8-toluene (Surrogate) | HA1-3 | SE220737.001 | % | 60 - 130% | 65 |
| | HA2-3 | SE220737.002 | % | 60 - 130% | 73 |
| | QC1 | SE220737.015 | % | 60 - 130% | 71 |

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

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|---|---|---|---|---|---|
| Bromofluorobenzene (Surrogate) | HA1-3 | SE220737.001 | % | 60 - 130% | 81 |
| | HA2-3 | SE220737.002 | % | 60 - 130% | 92 |
| | QC1 | SE220737.015 | % | 60 - 130% | 80 |
| d4-1,2-dichloroethane (Surrogate) | HA1-3 | SE220737.001 | % | 60 - 130% | 85 |
| | HA2-3 | SE220737.002 | % | 60 - 130% | 89 |
| | QC1 | SE220737.015 | % | 60 - 130% | 91 |
| d8-toluene (Surrogate) | HA1-3 | SE220737.001 | % | 60 - 130% | 65 |
| | HA2-3 | SE220737.002 | % | 60 - 130% | 73 |
| | QC1 | SE220737.015 | % | 60 - 130% | 71 |

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 |
|---|---|---|---|---|
| LB226913.001 | Mercury | mg/L | 0.0001 | <0.0001 |

### Mercury in Soil

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB227223.001 | Mercury | mg/kg | 0.05 | <0.05 |

### OC Pesticides in Soil

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB226970.001 | | Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 |
| | | Alpha BHC | mg/kg | 0.1 | <0.1 |
| | | Lindane | mg/kg | 0.1 | <0.1 |
| | | Heptachlor | mg/kg | 0.1 | <0.1 |
| | | Aldrin | mg/kg | 0.1 | <0.1 |
| | | Beta BHC | mg/kg | 0.1 | <0.1 |
| | | Delta BHC | mg/kg | 0.1 | <0.1 |
| | | Heptachlor epoxide | mg/kg | 0.1 | <0.1 |
| | | Alpha Endosulfan | mg/kg | 0.2 | <0.2 |
| | | Gamma Chlordane | mg/kg | 0.1 | <0.1 |
| | | Alpha Chlordane | mg/kg | 0.1 | <0.1 |
| | | 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 |
| | | p,p'-DDT | mg/kg | 0.1 | <0.1 |
| | | Endosulfan sulphate | mg/kg | 0.1 | <0.1 |
| | | Endrin Aldehyde | mg/kg | 0.1 | <0.1 |
| | | Methoxychlor | mg/kg | 0.1 | <0.1 |
| | | Endrin Ketone | mg/kg | 0.1 | <0.1 |
| | | Isodrin | mg/kg | 0.1 | <0.1 |
| | | Mirex | mg/kg | 0.1 | <0.1 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 93 |

### PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB226970.001 | | 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) | % | - | 92 |
| | | 2-fluorobiphenyl (Surrogate) | % | - | 86 |
| | | d14-p-terphenyl (Surrogate) | % | - | 88 |

### PCBs in Soil

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

| Sample Number | Parameter | Units | LOR |
|---|---|---|---|

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.

### PCBs in Soil (continued)

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB226970.001 | | 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 | <1 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 93 |

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

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB227222.001 | 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 |
|---|---|---|---|---|
| LB227006.001 | Arsenic, As | µg/L | 1 | <1 |
| | Cadmium, Cd | µg/L | 0.1 | <0.1 |
| | Chromium, Cr | µg/L | 1 | <1 |
| | Copper, Cu | µg/L | 1 | <1 |
| | Lead, Pb | µg/L | 1 | <1 |
| | Nickel, Ni | µg/L | 1 | <1 |
| | Zinc, Zn | µg/L | 5 | <5 |
| LB227006.025 | Arsenic, As | µg/L | 1 | <1 |
| | Cadmium, Cd | µg/L | 0.1 | <0.1 |
| | Chromium, Cr | µg/L | 1 | <1 |
| | Copper, Cu | µg/L | 1 | <1 |
| | Lead, Pb | µg/L | 1 | <1 |
| | Nickel, Ni | µg/L | 1 | <1 |
| | Zinc, Zn | µg/L | 5 | <5 |

### TRH (Total Recoverable Hydrocarbons) in Soil

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

| Sample Number | Parameter | Units | LOR | Result |
|---|---|---|---|---|
| LB226970.001 | 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 |
|---|---|---|---|---|---|
| LB226974.001 | 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 | mg/kg | 0.1 | <0.1 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | % | - | 89 |
| | | d8-toluene (Surrogate) | % | - | 76 |
| | | Bromofluorobenzene (Surrogate) | % | - | 93 |
| | Totals | Total BTEX | mg/kg | 0.6 | <0.6 |

### Volatile Petroleum Hydrocarbons in Soil

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

| Sample Number | Parameter | Units | LOR |
|---|---|---|---|

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.

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

| Sample Number | | Parameter | Units | LOR | Result |
|---|---|---|---|---|---|
| LB226974.001 | | TRH C6-C9 | mg/kg | 20 | <20 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | % | - | 89 |

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

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

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

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

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

## Mercury (dissolved) in Water

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE220737.008 | LB226913.014 | Mercury | µg/L | 0.0001 | <0.0001 | <0.0001 | 196 | 2 |
| SE220758.007 | LB226913.024 | Mercury | µg/L | 0.0001 | <0.0001 | <0.0001 | 200 | 199 |

## Mercury in Soil

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE220738.001 | LB227223.014 | Mercury | mg/kg | 0.05 | <0.05 | <0.05 | 200 | 0 |
| SE220738.009 | LB227223.023 | Mercury | mg/kg | 0.05 | <0.05 | <0.05 | 200 | 0 |

## Moisture Content

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE220780.030 | LB227109.011 | % Moisture | %w/w | 1 | <1 | <1 | 200 | 0 |
| SE220780.033 | LB227109.015 | % Moisture | %w/w | 1 | 20.3 | 19.3 | 35 | 5 |

## OC Pesticides in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220749.001 | LB226970.014 | | Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Alpha BHC | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Lindane | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Heptachlor | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Aldrin | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Beta BHC | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Delta BHC | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Heptachlor epoxide | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | o,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Alpha Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Gamma Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Alpha Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | trans-Nonachlor | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | p,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Dieldrin | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Endrin | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | o,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | o,p'-DDT | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Beta Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | p,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | p,p'-DDT | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Endosulfan sulphate | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Endrin Aldehyde | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Methoxychlor | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Endrin Ketone | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Isodrin | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Mirex | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Total CLP OC Pesticides | mg/kg | 1 | <1 | <1 | 200 | 0 |
| | | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0.16 | 0.15 | 30 | 5 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE220749.001 | LB226970.014 | Naphthalene | mg/kg | 0.1 | <0.1 | 0.2 | 121 | 40 |
| | | 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | 0.1 | 200 | 10 |
| | | 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Acenaphthylene | mg/kg | 0.1 | 0.1 | 0.2 | 110 | 40 |
| | | 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 | 0.8 | 45 | 50 ② |
| | | Anthracene | mg/kg | 0.1 | 0.2 | 0.3 | 74 | 40 |
| | | Fluoranthene | mg/kg | 0.1 | 1.0 | 1.6 | 38 | 45 ② |
| | | Pyrene | mg/kg | 0.1 | 1.1 | 1.7 | 37 | 44 ② |
| | | Benzo(a)anthracene | mg/kg | 0.1 | 0.6 | 0.9 | 43 | 45 ② |
| | | Chrysene | mg/kg | 0.1 | 0.5 | 0.9 | 44 | 54 ② |

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

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

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

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

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

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

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220749.001 | LB226970.014 | | Benzo(b&j)fluoranthene | mg/kg | 0.1 | 0.9 | 1.6 | 38 | 58 ② |
| | | | Benzo(k)fluoranthene | mg/kg | 0.1 | 0.5 | 0.7 | 48 | 36 |
| | | | Benzo(a)pyrene | mg/kg | 0.1 | 0.9 | 1.5 | 39 | 49 ② |
| | | | Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | 0.6 | 1.0 | 43 | 54 ② |
| | | | Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Benzo(ghi)perylene | mg/kg | 0.1 | 0.6 | 1.0 | 43 | 54 ② |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=0 | mg/kg | 0.2 | 1.1 | 1.9 | 23 | 49 ② |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | mg/kg | 0.3 | 1.2 | 2.0 | 29 | 46 ② |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | mg/kg | 0.2 | 1.2 | 1.9 | 23 | 48 ② |
| | | | Total PAH (18) | mg/kg | 0.8 | 7.3 | 12 | 38 | 51 ② |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.5 | 0.5 | 30 | 2 |
| | | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.5 | 0.5 | 30 | 2 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.5 | 0.4 | 30 | 5 |

## PCBs in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220749.001 | LB226970.014 | | Arochlor 1016 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1221 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1232 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1242 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1248 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1254 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1260 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1262 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1268 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Total PCBs (Arochlors) | mg/kg | 1 | <1 | <1 | 200 | 0 |
| | | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0 | 0 | 30 | 5 |

## 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 % |
|---|---|---|---|---|---|---|---|---|
| SE220738.001 | LB227222.014 | Arsenic, As | mg/kg | 1 | 8 | 7 | 44 | 6 |
| | | Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | Chromium, Cr | mg/kg | 0.5 | 11 | 11 | 35 | 7 |
| | | Copper, Cu | mg/kg | 0.5 | 68 | 80 | 31 | 16 |
| | | Nickel, Ni | mg/kg | 0.5 | 2.5 | 5.5 | 43 | 76 ② |
| | | Lead, Pb | mg/kg | 1 | 22 | 26 | 34 | 15 |
| | | Zinc, Zn | mg/kg | 2 | 29 | 32 | 37 | 9 |
| SE220738.009 | LB227222.023 | Arsenic, As | mg/kg | 1 | 7 | 7 | 44 | 12 |
| | | Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | Chromium, Cr | mg/kg | 0.5 | 9.8 | 11 | 35 | 15 |
| | | Copper, Cu | mg/kg | 0.5 | 59 | 130 | 31 | 74 ② |
| | | Nickel, Ni | mg/kg | 0.5 | 1.8 | 5.9 | 43 | 108 ② |
| | | Lead, Pb | mg/kg | 1 | 25 | 40 | 33 | 48 ② |
| | | Zinc, Zn | mg/kg | 2 | 25 | 56 | 35 | 75 ② |

## Trace Metals (Dissolved) in Water by ICPMS

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

| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|
| SE220737.013 | LB227006.014 | Arsenic, As | µg/L | 1 | <1 | <1 | 156 | 0 |
| | | Cadmium, Cd | µg/L | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Chromium, Cr | µg/L | 1 | 3 | 3 | 51 | 1 |
| | | Copper, Cu | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | Lead, Pb | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | Nickel, Ni | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | Zinc, Zn | µg/L | 5 | <5 | <5 | 200 | 0 |
| SE220758.007 | LB227006.027 | Arsenic, As | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | Cadmium, Cd | µg/L | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Chromium, Cr | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | Copper, Cu | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | Lead, Pb | µg/L | 1 | <1 | <1 | 200 | 0 |
| | | Nickel, Ni | µg/L | 1 | 1 | 1 | 93 | 11 |
| | | Zinc, Zn | µg/L | 5 | 6 | 5 | 109 | 8 |

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

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

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

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

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

## TRH (Total Recoverable Hydrocarbons) in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220749.001 | LB226970.014 | | TRH C10-C14 | mg/kg | 20 | <20 | <20 | 200 | 0 |
| | | | TRH C15-C28 | mg/kg | 45 | 87 | 270 | 55 | 103 ② |
| | | | TRH C29-C36 | mg/kg | 45 | 110 | 350 | 50 | 103 ② |
| | | | TRH C37-C40 | mg/kg | 100 | <100 | <100 | 200 | 0 |
| | | | TRH C10-C36 Total | mg/kg | 110 | 200 | 620 | 57 | 103 ② |
| | | | TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | 680 | 79 | 105 ② |
| | | TRH F Bands | TRH >C10-C16 | mg/kg | 25 | <25 | <25 | 200 | 0 |
| | | | TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | <25 | <25 | 200 | 0 |
| | | | TRH >C16-C34 (F3) | mg/kg | 90 | 180 | 540 | 55 | 100 ② |
| | | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | 140 | 200 | 15 |

## VOC's in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220780.027 | LB226974.017 | Monocyclic | Benzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Aromatic | Toluene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 171 | 0 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 8.2 | 9.0 | 50 | 10 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 7.7 | 7.1 | 50 | 8 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.0 | 8.0 | 50 | 0 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | | Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | 200 | 0 |

## Volatile Petroleum Hydrocarbons in Soil

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

| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
|---|---|---|---|---|---|---|---|---|---|
| SE220780.027 | LB226974.017 | | 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 | - | 8.2 | 9.0 | 30 | 10 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 7.7 | 7.1 | 30 | 8 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.0 | 8.0 | 30 | 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 |

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]AN312

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB227223.002 | Mercury | mg/kg | 0.05 | 0.19 | 0.2 | 70 - 130 | 97 |

### OC Pesticides in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226970.002 | | Heptachlor | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 112 |
| | | Aldrin | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 93 |
| | | Delta BHC | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 96 |
| | | Dieldrin | mg/kg | 0.2 | <0.2 | 0.2 | 60 - 140 | 94 |
| | | Endrin | mg/kg | 0.2 | 0.2 | 0.2 | 60 - 140 | 111 |
| | | p,p'-DDT | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 113 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | - | 0.14 | 0.15 | 40 - 130 | 93 |

### PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226970.002 | | Naphthalene | mg/kg | 0.1 | 3.3 | 4 | 60 - 140 | 82 |
| | | Acenaphthylene | mg/kg | 0.1 | 3.4 | 4 | 60 - 140 | 86 |
| | | Acenaphthene | mg/kg | 0.1 | 3.3 | 4 | 60 - 140 | 83 |
| | | Phenanthrene | mg/kg | 0.1 | 3.3 | 4 | 60 - 140 | 82 |
| | | Anthracene | mg/kg | 0.1 | 3.3 | 4 | 60 - 140 | 83 |
| | | Fluoranthene | mg/kg | 0.1 | 3.3 | 4 | 60 - 140 | 82 |
| | | Pyrene | mg/kg | 0.1 | 3.4 | 4 | 60 - 140 | 85 |
| | | Benzo(a)pyrene | mg/kg | 0.1 | 3.6 | 4 | 60 - 140 | 90 |
| | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.5 | 0.5 | 40 - 130 | 96 |
| | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.5 | 0.5 | 40 - 130 | 94 |
| | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.4 | 0.5 | 40 - 130 | 88 |

### PCBs in Soil

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

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB226970.002 | Arochlor 1260 | mg/kg | 0.2 | 0.5 | 0.4 | 60 - 140 | 125 |

### 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 % |
|---|---|---|---|---|---|---|---|
| LB227222.002 | Arsenic, As | mg/kg | 1 | 360 | 318.22 | 80 - 120 | 113 |
| | Cadmium, Cd | mg/kg | 0.3 | 5.9 | 4.81 | 70 - 130 | 123 |
| | Chromium, Cr | mg/kg | 0.5 | 41 | 38.31 | 80 - 120 | 106 |
| | Copper, Cu | mg/kg | 0.5 | 330 | 290 | 80 - 120 | 115 |
| | Nickel, Ni | mg/kg | 0.5 | 200 | 187 | 80 - 120 | 108 |
| | Lead, Pb | mg/kg | 1 | 97 | 89.9 | 80 - 120 | 108 |
| | Zinc, Zn | mg/kg | 2 | 290 | 273 | 80 - 120 | 108 |

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

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

| Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|
| LB227006.002 | Arsenic, As | µg/L | 1 | 21 | 20 | 80 - 120 | 103 |
| | Cadmium, Cd | µg/L | 0.1 | 21 | 20 | 80 - 120 | 104 |
| | Chromium, Cr | µg/L | 1 | 21 | 20 | 80 - 120 | 106 |
| | Copper, Cu | µg/L | 1 | 21 | 20 | 80 - 120 | 107 |
| | Lead, Pb | µg/L | 1 | 22 | 20 | 80 - 120 | 109 |
| | Nickel, Ni | µg/L | 1 | 22 | 20 | 80 - 120 | 108 |
| | Zinc, Zn | µg/L | 5 | 21 | 20 | 80 - 120 | 107 |
| LB227006.026 | Arsenic, As | µg/L | 1 | 20 | 20 | 80 - 120 | 101 |
| | Cadmium, Cd | µg/L | 0.1 | 20 | 20 | 80 - 120 | 101 |
| | Chromium, Cr | µg/L | 1 | 20 | 20 | 80 - 120 | 99 |
| | Copper, Cu | µg/L | 1 | 21 | 20 | 80 - 120 | 105 |
| | Lead, Pb | µg/L | 1 | 21 | 20 | 80 - 120 | 105 |
| | Nickel, Ni | µg/L | 1 | 21 | 20 | 80 - 120 | 104 |
| | Zinc, Zn | µg/L | 5 | 22 | 20 | 80 - 120 | 109 |

### TRH (Total Recoverable Hydrocarbons) in Soil

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

| Sample Number | Parameter | Units | LOR |
|---|---|---|---|

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

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

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

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226970.002 | | TRH C10-C14 | mg/kg | 20 | 43 | 40 | 60 - 140 | 108 |
| | | TRH C15-C28 | mg/kg | 45 | <45 | 40 | 60 - 140 | 100 |
| | | TRH C29-C36 | mg/kg | 45 | <45 | 40 | 60 - 140 | 83 |
| | TRH F Bands | TRH >C10-C16 | mg/kg | 25 | 41 | 40 | 60 - 140 | 103 |
| | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | 40 | 60 - 140 | 98 |
| | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | 20 | 60 - 140 | 75 |

### VOC's in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226974.002 | Monocyclic | Benzene | mg/kg | 0.1 | 4.1 | 5 | 60 - 140 | 81 |
| | Aromatic | Toluene | mg/kg | 0.1 | 3.8 | 5 | 60 - 140 | 76 |
| | | Ethylbenzene | mg/kg | 0.1 | 4.4 | 5 | 60 - 140 | 88 |
| | | m/p-xylene | mg/kg | 0.2 | 8.8 | 10 | 60 - 140 | 88 |
| | | o-xylene | mg/kg | 0.1 | 4.5 | 5 | 60 - 140 | 90 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 8.5 | 10 | 70 - 130 | 85 |
| | | d8-toluene (Surrogate) | mg/kg | - | 8.3 | 10 | 70 - 130 | 83 |
| | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.4 | 10 | 70 - 130 | 84 |

### Volatile Petroleum Hydrocarbons in Soil

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

| Sample Number | | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
|---|---|---|---|---|---|---|---|---|
| LB226974.002 | | TRH C6-C10 | mg/kg | 25 | 74 | 92.5 | 60 - 140 | 80 |
| | | TRH C6-C9 | mg/kg | 20 | 64 | 80 | 60 - 140 | 80 |
| | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 8.5 | 10 | 70 - 130 | 85 |
| | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.4 | 10 | 70 - 130 | 84 |
| | VPH F Bands | TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | 48 | 62.5 | 60 - 140 | 77 |

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

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

## Mercury in Soil

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

| QC Sample | Sample Number | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE220718.001 | LB227223.004 | Mercury | mg/kg | 0.05 | 0.23 | <0.05 | 0.2 | 105 |

## PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE220756.028 | LB226970.026 | | Naphthalene | mg/kg | 0.1 | <0.1 | 4 | 84 |
| | | | 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | - | - |
| | | | 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | - | - |
| | | | Acenaphthylene | mg/kg | 0.1 | <0.1 | 4 | 87 |
| | | | Acenaphthene | mg/kg | 0.1 | <0.1 | 4 | 86 |
| | | | Fluorene | mg/kg | 0.1 | <0.1 | - | - |
| | | | Phenanthrene | mg/kg | 0.1 | <0.1 | 4 | 83 |
| | | | Anthracene | mg/kg | 0.1 | <0.1 | 4 | 83 |
| | | | Fluoranthene | mg/kg | 0.1 | <0.1 | 4 | 83 |
| | | | Pyrene | mg/kg | 0.1 | <0.1 | 4 | 86 |
| | | | Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | - | - |
| | | | Chrysene | mg/kg | 0.1 | <0.1 | - | - |
| | | | Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | - | - |
| | | | Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | - | - |
| | | | Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | 4 | 89 |
| | | | 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 | - | - |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=0 | TEQ (mg/kg) | 0.2 | <0.2 | - | - |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 0.3 | <0.3 | - | - |
| | | | Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | TEQ (mg/kg) | 0.2 | <0.2 | - | - |
| | | | Total PAH (18) | mg/kg | 0.8 | <0.8 | - | - |
| | | Surrogates | d5-nitrobenzene (Surrogate) | mg/kg | - | 0.5 | - | 98 |
| | | | 2-fluorobiphenyl (Surrogate) | mg/kg | - | 0.5 | - | 96 |
| | | | d14-p-terphenyl (Surrogate) | mg/kg | - | 0.5 | - | 92 |

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

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

| QC Sample | Sample Number | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE220718.001 | LB227222.004 | Arsenic, As | mg/kg | 1 | 48 | 4 | 50 | 88 |
| | | Cadmium, Cd | mg/kg | 0.3 | 46 | <0.3 | 50 | 91 |
| | | Chromium, Cr | mg/kg | 0.5 | 75 | 29 | 50 | 94 |
| | | Copper, Cu | mg/kg | 0.5 | 54 | 0.5 | 50 | 107 |
| | | Nickel, Ni | mg/kg | 0.5 | 52 | 1.6 | 50 | 100 |
| | | Lead, Pb | mg/kg | 1 | 59 | 11 | 50 | 95 |
| | | Zinc, Zn | mg/kg | 2 | 56 | 6.4 | 50 | 99 |

## Trace Metals (Dissolved) in Water by ICPMS

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

| QC Sample | Sample Number | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE220610A.010 | LB227006.004 | Zinc, Zn | µg/L | 5 | 25 | <5 | 20 | 115 |

## TRH (Total Recoverable Hydrocarbons) in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|
| SE220756.028 | LB226970.025 | | TRH C10-C14 | mg/kg | 20 | <20 | 40 | 118 |
| | | | TRH C15-C28 | mg/kg | 45 | <45 | 40 | 118 |
| | | | TRH C29-C36 | mg/kg | 45 | <45 | 40 | 98 |
| | | | TRH C37-C40 | mg/kg | 100 | <100 | - | - |
| | | | TRH C10-C36 Total | mg/kg | 110 | <110 | - | - |
| | | | TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | - | - |
| | | TRH F Bands | TRH >C10-C16 | mg/kg | 25 | <25 | 40 | 115 |
| | | | TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | <25 | - | - |
| | | | TRH >C16-C34 (F3) | mg/kg | 90 | <90 | 40 | 115 |
| | | | TRH >C34-C40 (F4) | mg/kg | 120 | <120 | - | - |

## VOC's in Soil

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

| QC Sample | Sample Number | Parameter | Units | LOR |
|---|---|---|---|---|

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

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

## VOC's in Soil (continued)

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE220737.001 | LB226974.004 | Monocyclic Aromatic | Benzene | mg/kg | 0.1 | 3.6 | <0.1 | 5 | 72 |
| | | | Toluene | mg/kg | 0.1 | 3.4 | <0.1 | 5 | 68 |
| | | | Ethylbenzene | mg/kg | 0.1 | 4.1 | <0.1 | 5 | 81 |
| | | | m/p-xylene | mg/kg | 0.2 | 8.2 | <0.2 | 10 | 82 |
| | | | o-xylene | mg/kg | 0.1 | 4.2 | <0.1 | 5 | 84 |
| | | Polycyclic | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 7.9 | 8.5 | 10 | 79 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 7.4 | 6.5 | 10 | 74 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.1 | 8.1 | 10 | 81 |
| | | Totals | Total Xylenes | mg/kg | 0.3 | 12 | <0.3 | - | - |
| | | | Total BTEX | mg/kg | 0.6 | 24 | <0.6 | - | - |

## Volatile Petroleum Hydrocarbons in Soil

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

| QC Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery% |
|---|---|---|---|---|---|---|---|---|---|
| SE220737.001 | LB226974.004 | | TRH C6-C10 | mg/kg | 25 | 65 | <25 | 92.5 | 69 |
| | | | TRH C6-C9 | mg/kg | 20 | 56 | <20 | 80 | 70 |
| | | Surrogates | d4-1,2-dichloroethane (Surrogate) | mg/kg | - | 7.9 | 8.5 | 10 | 79 |
| | | | d8-toluene (Surrogate) | mg/kg | - | 7.4 | 6.5 | 10 | 74 |
| | | | Bromofluorobenzene (Surrogate) | mg/kg | - | 8.1 | 8.1 | - | 81 |
| | | VPH F Bands | Benzene (F0) | mg/kg | 0.1 | 3.6 | <0.1 | - | - |
| | | | TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | 41 | <25 | 62.5 | 65 |

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

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

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

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

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

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

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

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# ENVIRONMENTAL SITE ASSESSMENT
# 21F & 21G SCHOOL DRIVE,
# TOMAGO NSW 2322

| | |
|---|---|
| Job Number: | JN01446 |
| Issued date: | 12 October 2020 |
| Prepared for: | Tomago Aluminium Company Ltd |
| Address: | 638 Tomago Road, Tomago NSW 2322 |
| Prepared for: | Remondis Australia Pty Ltd |
| Address: | Level 4, 163 O'Riordan Street, Mascot NSW 2020 |
| Report by: | Craig Wellings, Principal Scientist |
| Total No of pages: | 26 |

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EHO CONSULTING
ENVIRONMENTAL HAZMAT OCCUPATIONAL



# 21F & 21G School Drive, Tomago NSW 2322

Author: Craig Wellings – Principal (BSc)
EHO Consulting Pty Ltd
12 October 2020

# Executive Summary

## Background

EHO Consulting Pty Ltd (EHO) were engaged by Tomago Aluminium Company Ltd (TAC) to undertake a review of a Preliminary Contamination Assessment (PCA) report prepared by JM Environments (JME), (Ref: JME2005-1, 22 April 2020), (**Ref.1**), for the properties identified as 21D, 21F and 21G School Drive, Tomago NSW 2322. The PCA report was prepared on behalf of Remondis Australia Pty Ltd (Remondis) as part of pre-purchase due diligence carried out as part of the potential sale of the Site to Remondis by TAC.

## Objectives

In general accordance with National Environmental Protection Council, National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B4 – Guideline on Site Specific Risk Assessments (**Ref.2**), the objective of this report is to assess and to the extent practicable define the potential risks to environmental and/or ecological receptors in and around the Site from:

- Contaminants of concern (COC) within soil encountered at the Site; and
- COC within groundwater at and/or migrating from the Site.

## Scope of Works

EHO attended the Site on 4 June 2020 and 12 June 2020 in order to install and sample a total of four (4) temporary groundwater wells across the site.

In addition to the groundwater wells a total of 32 soil samples were collected from 17 locations across the general Site as part of the PCA (Ref.1) and a total of eight (8) samples from an additional test pits were advanced by EHO in the north-eastern section of the Site, previously identified as the 'Metals Area'.

## Summary of Results

**Soil**

***General Site***

- Arsenic (As) was detected in concentrations exceeding the adopted site assessment criteria (SAC), (**Ref.2**) at the surface in two (2) of locations, both results indicate contamination hotspots (>250% of SAC);
  - TP5, TP7;
- Chromium (Cr) was not detected in concentrations which exceed the SAC;
- Copper (Cu) was detected in concentrations exceeding the SAC at varying depths in seven (7) locations, with six (6) results indicate contamination hotspots;
  - TP3, TP5, TP7, TP13, TP17, TP19, TP21;
- Lead (Pb) was not detected in concentrations which exceed the SAC;
- Nickel (Ni) was not detected in concentrations which exceed the SAC; and
- Zinc (Zn) was detected in concentrations exceeding the SAC in 24 samples from 16 locations across the Site;
  - TP1 (x2), TP2, TP3, TP4, TP5, TP7 (x2); TP12 (x2), TP13 (x3); TP14, TP15 (x2), TP16, TP17, TP18, TP19 (x2), TP20, TP21 (x2).

***Metals Area***

- Arsenic (As) was detected in concentrations exceeding the SAC at the surface in one (1) location within the metals area, with the result indicating a contamination hotspot of SAC);
    - TP8;
- Chromium (Cr) was not detected in concentrations which exceed the SAC;
- Copper (Cu) was detected in concentrations exceeding the SAC at varying depths in six (6) locations, with three (3) results indicate contamination hotspots;
    - TP8, TP25, TP27, TP28, TP29, TP31;
- Lead (Pb) was detected in concentrations which exceed the SAC in two locations but neither result indicates a contamination hotspot;
    - TP8, TP27;
- Nickel (Ni) was not detected in concentrations which exceed the SAC; and
- Zinc (Zn) was detected in concentrations exceeding the SAC in 11 samples from 12 locations across the metals area;
    - TP8, TP9 (x2), TP10, TP11 (x2), TP25, TP27, TP29, TP31.

**Groundwater**

- Arsenic (As) was not detected in concentrations exceeding the SAC in groundwater at the Site;
- Cadmium (Cd) was not detected in concentrations which exceed the SAC;
- Copper (Cu) was detected in concentrations exceeding the SAC at three (3) of the four (4) locations;
    - GW1, GW2, GW3;
- Chromium was detected in concentrations equalling or exceeding the SAC in all of the four (4) locations;
    - GW1 – GW4
- Mercury (Hg) was not detected in groundwater at the Site;
- Lead (Pb) was not detected in groundwater in concentrations which exceed the SAC;
- Nickel (Ni) was not detected in groundwater in concentrations which exceed the SAC; and
- Zinc (Zn) was detected in concentrations exceeding the SAC in all of the four (4) locations;
    - GW1 - GW4.

## Conclusions and Recommendations

**Soil**

Based on the results of the investigation four (4) COC were detected in soil in concentrations greater than the respective SACs (As, Cu, Pb & Zn), but Pb was not detected in hotspot concentrations. Zinc has been detected in concentrations exceeding the SAC in 24 of 25 locations sampled with hotspots concentrations detected in 21 of 25 locations.

The results indicate that significant potential risk to on-site receptors exists however, potential onsite receptors have been assessed as being limited, so risk to on-site receptors could be considered low.

Based on the surface condition of the site at the time of assessment, off-site migration potential of impacted soils due to environmental factors such as wind and erosion from surface water runoff is low, and so the potential risk to off-site receptors due to migration of impacted soils from the Site is also considered low.

**Groundwater**

Based on the results of the investigation three (3) COC were detected in groundwater in concentrations greater than the respective SACs (Cu, Cr & Zn). Of these COC, Cr and Zn were detected in Background sample (GW4) in concentrations already exceeding the respective SACs, that is groundwater entering the Site from upgradient exceeds the SAC for both Cr and Zn.

***On-site Groundwater Risk***

The only on-site ecological receptor of groundwater is the existing flora which has already been assessed as being of low conservation value, being highly disturbed with largely introduced species including a number of priority weed species. It is also understood that the future development of the Site will require the majority if not the entirely of the Site to be further disturbed and/or cleared, effectively removing the only onsite ecological receptor to groundwater. As a result, the exposure pathway to impacts from onsite groundwater is incomplete and so the associated risk to ecological receptors is considered negligible.

***Off-site Groundwater Risk***

Due to the limitations of well placement and indicators of the potential for attenuation to be occurring, the risk associated with concentrations of COC in groundwater migrating from the Site cannot be clearly defined in this assessment. Observations of vegetation beyond the Site boundary did not note evidence of plant stress occurring, with established vegetation appearing healthy and evidence of vegetation repopulating cleared areas particularly to the east and south of the Site boundary.

It is also understood that the future development of the Site will result in the majority, if not the entirely of the Site having a low permeability surface. Any reduction in concentrations of COC impacting groundwater via infiltration, combined with reduction of flow rate of groundwater through the Site is likely to result in overall reductions in COC potentially migrating from the Site, due to the combined mechanisms of source reduction and impact attenuation.

Taking into account the above factors, potential risk to off-site receptors from groundwater migrating from the Site is currently considered low with future risk likely to reduce as a result of the nature of the proposed development.

**Duty to Report**

Based on the findings of this assessment it could be argued that the definition of 'foreseeable exposure' to the soil and/or groundwater impacts as they apply to the Site based on the available are not yet proven to have been met, and so there is currently no duty to report the site, due to environmental / ecological considerations.

However, further investigation of off-site groundwater conditions close to the Site may change this conclusion, if off-site migration of elevated concentrations of COC (i.e. above Background) is found to be occurring.

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# Appendices


Appendix A – Figures

Appendix B – Results Summary Tables

Appendix C – Laboratory Documentation

# 1 Introduction

## 1.1 Background

EHO Consulting Pty Ltd (EHO) were engaged by Tomago Aluminium Company Ltd (TAC) to undertake a review of a Preliminary Contamination Assessment (PCA) report prepared by JM Environments (JME), (Ref: JME2005-1, 22 April 2020), (**Ref.1**), for the properties identified as 21D, 21F and 21G School Drive, Tomago NSW 2322. The PCA report was prepared on behalf of Remondis Australia Pty Ltd (Remondis) as part of pre-purchase due diligence carried out as part of the potential sale of the Site to Remondis by TAC.

Based on the results further assessment was determined to be required to be undertaken at 21F and 21G School Drive, Tomago NSW 2322 (the Site).

This Environmental Site Assessment (ESA) report has been prepared to assist in informing the due diligence process associated with the potential sale of the Site, targeted at better defining specific issues identified in the PCA report. As such this report may not satisfy all requirements of a report prepared for statutory review by regulators. It is noted that the background information regarding the site history and use have been comprehensively covered in the PCA report (**Ref.1**).

## 1.2 Objectives

In general accordance with National Environmental Protection Council, National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B4 – Guideline on Site Specific Risk Assessments (**Ref.2**), the objective of this report is to assess and to the extent practicable define the potential risks to environmental and/or ecological receptors in and around the Site from:

- Contaminants of concern (COC) within soil encountered at the Site; and
- COC within groundwater at and/or migrating from the Site.

## 1.3 Subsequent Reports

Following the works completed by EHO, Remondis engaged Wildthing Environmental Consultants to undertake a Biodiversity Development Assessment (BDA) of the Site, with the following report completed on 11 August 2020:

- Biodiversity Development Assessment Report for a Resource Recovery Facility at 21D, 21F and part 35A School Drive Tomago NSW (Project No 12490, Version 2, 11 August 2020), (**Ref.3**).

The BDA report has been referred to within the preparation of this report where the findings have implications with regards to the conclusions drawn by EHO regarding the environmental risk associated with the Site.

# 2 Site Information

## 2.1 Site Address

21F and 21G School Drive, Tomago NSW 2322.

## 2.2 Lot and Deposited Plan

Lot 7 and 8, DP 270328

## 2.3 Site Coordinates

Latitude -32.82651, Longitude 151.72979 (approximate centre of Site).

## 2.4 Site Locality and Layout

The Site is located on the northern side of the eastern end of School Drive, Tomago NSW 2322, and extends to the north approximately 300 m, with an average width of approximately 80 m.

The Site layout is presented on Figure 2 in **Appendix A**.

## 2.5 Conceptual Site Model

A conceptual site model (CSM) was developed within the PCA report (**Ref.1**). The environmental risk the elements of the CSM are summarised as follows:

- Areas of Environmental Concern;
  - AECs on the site were considered to include fill across the site's surface.
- Contaminant Transport Mechanisms;
  - Primary transport mechanisms on the site were considered to include:
    - Wind transport of fine surface material;
    - Surface water flow; and
    - Percolation of stormwater through permeable sediments into groundwater, and groundwater migration towards the Hunter River.
- Contaminant Exposure Pathways
  - For contaminated soil to pose a risk to a receptor, a complete exposure pathway must exist between the source of impact and the receptor. A complete exposure pathway consists of then following elements:
    - A source and mechanism for release;
    - A storage and/or transport medium (e.g. contaminants stored in fine soil types and transported into the atmosphere as dust);
    - An exposure point, where the receptor comes in contact with the contamination; and
    - An exposure route (e.g. inhalation).
- Potential exposure pathways on the site were considered to include:
  - Metabolisation by the local ecology; and
  - Off-site migration of groundwater potentially impacting hydraulically down-gradient surface water users and ecology.
- Identification of Receptors at Risk
  - Potential receptors were considered to include:
    - Local ecology;
    - Groundwater; and
    - Down-gradient surface water (Hunter River) users and ecology.

## 2.6 Areas Investigated

The following areas of the Site were invested as part of this assessment:

- Site general - groundwater; and
- Area of metals impact in shallow soil (<0.5 m below existing ground level, (mbgl)) in the vicinity of 'TP8' (Lat. -32.82595, Long. 151.72993), in the north-eastern portion of the Site.

The areas investigated are presented on Figures 2 and 3 in **Appendix A**.

# 3 Site Assessment Criteria

For the purposes of this assessment the site assessment criteria detailed in the following sections have been adopted.

## 3.1 Ecological

- National Environmental Protection Council, National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater (**Ref.4**);
    - Table 1B(1) Soil-specific added contaminant limits for aged zinc in soil – Commercial / industrial;
    - Table 1B(2) Soil-specific added contaminant limits for aged copper in soil – Commercial / industrial;
    - Table 1B(3) Soil-specific added contaminant limits for aged chromium III and nickel in soil – Commercial / industrial;
    - Table 1B(4) Generic added contaminant limits for lead in soils irrespective of their physicochemical properties – Commercial / industrial;
    - Table 1B(5) Generic EILs for aged arsenic in soils irrespective of their physicochemical properties – Commercial / industrial; and
    - Table 1C Groundwater Investigation Levels (GILs)

# 4 Investigation Scope

The following scope was undertaken as part of the investigation into the potential human health risk posed by the COPC identified at the Site.

EHO attended the Site on 4 June 2020 in order to complete the scope described below. Prior to EHO attending the Site the fieldworks associated with the PCA (**Ref.1**) were undertaken on the 6 April 2020.

## 4.1 Groundwater

A total of four (4) temporary monitoring wells were advanced across the using a 6 tonne (T) excavator equipped with 300 mm auger attachment, to the maximum depth achievable after groundwater was encountered. The wells were surveyed as follows:

| | MGA or ISG coordinates (Grid or Ground Coords) | | RL (AHD) | |
|---|---|---|---|---|
| Borehole ID | Easting | Northing | Top of PVC pipe level | Ground level |
| MW-1 | 381130.5 | 6367111.0 | 5.339 | 4.50 |
| MW-2 | 381169.2 | 6367150.3 | 6.456 | 6.00 |
| MW-3 | 381118.6 | 6367208.3 | 6.652 | 5.70 |
| MW-4 | 380990.7 | 6367357.7 | 5.621 | 4.85 |

The location of the wells and the interpolated groundwater gradient and are presented on Figure 3 in **Appendix A**.

### 4.1.1 Well Construction

The temporary groundwater monitoring wells were constructed of 50 mm Class 18 PVC pipe fitted with sealed screw connectors, with the screen section being 1.5 m long and having laser cut apertures. The bottom of the wells were fitted with a conical push-in plug and the top with a domed push on cap of the same PVC as the well pipe (casing and screen). Following advancement of the bores, the wells were hand pushed into the sub-aquifer strata and the bore anulus backfilled with the cuttings from the bore advancement. The cuttings were primarily fine-medium sands and a seal was not employed due to the high permeability of the general strata across the site (fine-medium sands).

The wells were located to attempt to represent the entirely of groundwater flow through the site based on the topography and site orientation, subject to accessibility. Approximately 0.5m of casing was left above the level of the surrounding site surface to aid location and sampling.

## 4.2 Soil

### 4.2.1 General Site

A total of 32 soil samples were collected from 17 locations across the general Site as part of the PCA (Ref.1). The results of the analyses from these samples have been used for the purposes of this assessment and are presented in the results summary table provided in **Appendix B**.

## 4.3 Area of Metals Impact

A total of eight (8) test pits (TP24-TP31) were advanced by EHO using an excavator to depths of at least 0.5 metres below ground level (mbgl) or natural ground whichever was encountered first. The test pits were set out in roughly semi-circular pattern in two (2) rows to the west of, and centred on

the position of 'TP8', which was advanced during the investigation associated with the PCA (**Ref.1**). TP8 had not been backfilled and so was able to be positively identified and visually assessed. The investigation was not extended to the east of the position of TP8, as the test pit is positioned close to the eastern boundary of the Site.

The location of the test pits advanced within the area of metals impact by EHO were recorded with a hand-held GPS and are presented on Figure 2 in **Appendix A**.

## 4.4 Sampling Methodology

### 4.4.1 Soil

Samples were collected by hand from the sides of each test pit using new, disposable nitrile gloves for each sample. Samples were placed into laboratory supplied jars fitted with sealable lids and filled to minimise headspace in order to minimise the potential for the loss of volatiles.

#### *4.4.1.1 Metals Area*

The samples collected from the metals area were taken from fill encountered in each test pit. Where the fill was observed to comprise similar dark grey to black fine sand as was observed in TP8, this material was preferentially sampled in order to ensure to the extent practicable, that the metals encountered in high concentration in TP8 may be similarly encountered, if present in the surrounding test pits. The intent of this strategy was to ensure that the potential for unidentified hotspots to the be present following the investigation was minimised.

In addition to the samples collected by EHO, results of eight (8) relevant samples collected from test pits in the vicinity of TP8 as part of the PCA (Ref.1) have been used for the purposes of this assessment.

The metals area assessed is approximately 4 900 $m^2$ (70 m x 70 m). Based on the frequency of testing the number of samples complies with frequency for detection of a circular hotspot of greater than 22.5 m in diameter as provided within the NSW EPA Sampling Design Guidelines (**Ref.5**) for a site <0.5 hectares (Ha).

### 4.4.2 Groundwater

Groundwater wells were developed following installation by using a disposable PVC bailer to remove at least 20 Litres (L) of groundwater from each well, with wells allowed to stablise for a period of eight (8) days following development.

Prior to sampling wells were equipped with new, dedicated PVC bailers which were used to purge the well to ensure that the sample collected was representative of the surrounding aquifer at the sampling location. During purging the groundwater was screened for pH, electrical conductivity, dissolved oxygen (DO) and temperature. Purging continued at each location until the pH units for three successive reading varied by less than 0.1 pH unit.

Sampling was undertaken using the bailer dedicated to each well to collect a grab sample after purging, with the collected groundwater being field filtered using a 45 µm filter.

### 4.4.3 Sample Handling and Submission

Samples were placed immediately following collection into a cooler box supplied with ice. The samples were transported within the cooler box to the NATA accredited laboratory used for the analyses of the samples (SGS Alexandria – NATA Accreditation No. 2562), by courier under standard chain of custody (CoC) protocols.

# 5 Results & Discussion

This section provides a summary of results from both samples collected by EHO and relevant samples collected as part of the PCA (**Ref.1**), compared to the adopted site assessment criteria (SAC) used for this assessment. Locations of samples are presented on Figures 2 and 3 provided in **Appendix A**.

Results of laboratory analyses undertaken as part of this assessment compared to the adopted SAC are presented in on the results summary tables in **Appendix B**. Copies of the laboratory certificates of analysis are provided in **Appendix C**.

## 5.1 Soil

### 5.1.1 General Site

Results from the 32 samples collected from 17 locations across the general site as part of the PCA (Ref.1) have been included in the consideration of the environmental status of the Site provided in this assessment. Analytes compared to the SAC are summarised as follows:

- Arsenic (As) was detected in concentrations exceeding the SAC at the surface in two (2) of locations, both results indicate contamination hotspots (>250% of SAC);
  - TP5, TP7;
- Chromium (Cr) was not detected in concentrations which exceed the SAC;
- Copper (Cu) was detected in concentrations exceeding the SAC at varying depths in seven (7) locations, with six (6) results indicate contamination hotspots;
  - TP3, TP5, TP7, TP13, TP17, TP19, TP21;
- Lead (Pb) was not detected in concentrations which exceed the SAC;
- Nickel (Ni) was not detected in concentrations which exceed the SAC; and
- Zinc (Zn) was detected in concentrations exceeding the SAC in 24 samples from 16 locations across the Site;
  - TP1 (x2), TP2, TP3, TP4, TP5, TP7 (x2); TP12 (x2), TP13 (x3); TP14, TP15 (x2), TP16, TP17, TP18, TP19 (x2), TP20, TP21 (x2).

### 5.1.2 Metals Area

A total of 16 samples, eight (8) collected by EHO and eight (8) collected during the PCA (**Ref.1**), including the sample collected from TP8 have been included in this assessment. The metals area assessed is approximately 4 900 $m^2$ (70 m x 70 m). Based on the frequency of testing the number of samples complies with frequency for detection of a circular hotspot of greater than 22.5 m in diameter as provided within the NSW EPA Sampling Design Guidelines (**Ref.5**) for a site <0.5 hectares (Ha). All samples collected by EHO were analysed for a range of metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) with the results compared to the ecological criteria (**Ref.4**) adopted for the assessment based on the proposed site use. The results of the analyses compared to the adopted criteria are presented on the Results Summary Tables in **Appendix B**.

- Arsenic (As) was detected in concentrations exceeding the SAC at the surface in one (1) location within the metals area, with the result indicating a contamination hotspot of SAC);
  - TP8;
- Chromium (Cr) was not detected in concentrations which exceed the SAC;
- Copper (Cu) was detected in concentrations exceeding the SAC at varying depths in six (6) locations, with three (3) results indicate contamination hotspots;
  - TP8, TP25, TP27, TP28, TP29, TP31;

- Lead (Pb) was detected in concentrations which exceed the SAC in two locations but neither result indicates a contamination hotspot;
    - TP8, TP27;
- Nickel (Ni) was not detected in concentrations which exceed the SAC; and
- Zinc (Zn) was detected in concentrations exceeding the SAC in 11 samples from 12 locations across the metals area;
    - TP8, TP9 (x2), TP10, TP11 (x2), TP25, TP27, TP29, TP31.

## 5.2 Groundwater

A total of four (4) groundwater wells were installed across the Site for the purpose of this assessment. The location of the test pits is presented on Figure 2 and 3 in **Appendix A**.

Groundwater results are also summarised as follows:

- Arsenic (As) was not detected in concentrations exceeding the SAC in groundwater at the Site;
- Cadmium (Cd) was not detected in concentrations which exceed the SAC;
- Copper (Cu) was detected in concentrations exceeding the SAC at three (3) of the four (4) locations;
    - GW1, GW2, GW3;
- Chromium was detected in concentrations equalling or exceeding the SAC in all of the four (4) locations;
    - GW1 – GW4
- Mercury (Hg) was not detected in groundwater at the Site;
- Lead (Pb) was not detected in groundwater in concentrations which exceed the SAC;
- Nickel (Ni) was not detected in groundwater in concentrations which exceed the SAC; and
- Zinc (Zn) was detected in concentrations exceeding the SAC in all of the four (4) locations;
    - GW1 - GW4.

It is noted that groundwater coming onto the Site (Background) already equals or exceeds the SAC for chromium and zinc. Copper concentrations in groundwater increase on the Site compared to Background and also exceed the SAC.

The Site subsurface is highly disturbed, presumably due to the long history of mining and industrial development at the Site. Due to this disturbance the groundwater does not flow in the direction expected based on the topography, that being towards the south. Rather, groundwater seems to concentrate toward the centre of the Site. As a result, and based on the limitations of the data available, the direction of flow and point at which groundwater departs from the Site is not clearly defined. However, it is likely that groundwater departs the site at several points but most likely along the eastern side of Lot 21G. The position and structure of the large concrete footing which bisects the Site also seems to be affecting groundwater movement with the low point of the inferred groundwater flow direction being just to the north of the footing and close to the eastern boundary.

The position of groundwater bores, inferred flow direction and the concentrations of analytes exceeding the SACs are shown on Figure 3 in **Appendix A**.

## 5.3 Potential Receptors

### 5.3.1 Soil

Based on the findings of the Biodiversity Development Assessment Report (2020), (Ref.3) the ecological community located within the site was not consistent with any nationally listed

threatened ecological communities, with only the following environmental and/or ecological receptors have potential to be exposed to soil contamination at the Site.

- Flora
  - One (1) plant community has been identified on Site
    - Red Bloodwood – Smooth Barked Apple healthy woodland – highly disturbed consisting of a few native shrubs with largely introduced groundcover including the following priority weed species:
      - Bitou Bush, Pampas Grass, Lantana and Fireweed;
- Fauna
  - Mahony's Toadlet (Uperolia mahonyi)
    - Assumed to be present only.

### 5.3.2 Groundwater

The following environmental and/or ecological receptors have potential to be exposed to soil contamination at the Site based on the findings of the Biodiversity Development Assessment Report (2020), (Ref.3).

- Flora (on Site)
  - One (1) plant community has been identified on Site
    - Red Bloodwood – Smooth Barked Apple healthy woodland – highly disturbed consisting of a few native shrubs with largely introduced groundcover including the following priority weed species:
      - Bitou Bush, Pampas Grass, Lantana and Fireweed;
- Flora and Fauna (off Site)
  - Four (4) nationally threatened ecological communities and 46 nationally threatened species were recorded as having potential habitat within 10 km of the Site.

## 5.4 Potential Exposure Pathways

The following exposure pathways are considered to exist on the site:

- Uptake of contaminants in soil and groundwater by plants;
- Ingestion and/or dermal absorption of contaminants in soil by animals.

## 5.5 Potential Exposure Risk

The following sections provide discussion of potential environmental risk posed by contaminants of concern (COC) detected at the Site.

### 5.5.1 Soil

Based on the results of the investigation four (4) COC were detected in soil in concentrations greater than the respective SACs (As, Cu, Pb & Zn), but Pb was not detected in hotspot concentrations. Of the remaining COC, Zn is both the most widespread across the Site and is also the highest in concentration when compared to the relative SACs. For these reasons the remainder of this discussion will focus on risk from Pb in soil as that risk can be inferred to be the greatest posed by COC in soil at the Site. Figures presenting the respective concentrations of As, Cu and Zn detected in soil at the Site are provided as Figures 2a, 2b and 2c respectively in **Appendix A**.

Zinc has been detected in concentrations exceeding the SAC in 24 of 25 locations sampled with hotspots concentrations detected in 21 of 25 locations. The greatest concentrations of metals including Zn appear to be in the Metals Area previously identified in the north- eastern section of the

Site, with the highest concentration of 27 000 mg/kg (TP8), being (TP8) 7 500 times the SAC (360 mg/kg).

The results indicate that significant potential risk to on-site receptors exists. However, potential receptors are limited as the existing flora which has already been assessed as being of low conservation value being highly disturbed with largely introduced species including a number of priority weed species and fauna is limited to a single species which has not be positively identified as being present on the site. Based on these factors alone, despite the high Zn concentrations detected, potential risk to on-site receptors could be considered to be low.

The Site surface is currently a combination of sparsely vegetated, compacted materials (sands and gravels) and more vegetated areas of lower compaction and stockpiled soils, with vegetation cover consisting primarily of shubs, grasses and weeds. The result is that the off-site migration potential of impacted soils due to environmental factors such as wind and erosion from surface water runoff is low. Based on the surface condition of the site at the time of assessment the potential risk to off-site receptors due to migration of impacted soils from the Site is considered low.

It is also understood that the future development of the Site will result in the majority, if not the entirely of the Site having a low permeability surface, due to the placement of building slabs and pavements significantly reducing if not effectively eliminating potential for on-site ecological receptors to contact impacted soils but also the potential for impacted soils to migrate off-site, further lowering potential risk to both on and off-site ecological receptors.

### 5.5.2 Groundwater

#### *5.5.2.1 On site*

Based on the results of the investigation three (3) COC were detected in groundwater in concentrations greater than the respective SACs (Cu, Cr & Zn). Of these COC, Cr and Zn were detected in Background sample (GW4) in concentrations already exceeding the respective SACs, that is groundwater entering the Site from upgradient exceeds the SAC for both Cr and Zn. Although, all on site samples exceeded the SACs and at least one (1) on site result for each of these analytes was greater than the respective Background concentration, indicating potential for the Site to contribute to further Cr and Zn impact to groundwater. Copper (Cu) was not detected in the Background sample in a concentration exceeding the SAC. However, Cu was detected in concentrations exceeding the SAC in all three on site samples, indicating potential for Cu, like Cr and Zn to contribute to impacts to groundwater.

The only on-site ecological receptor of groundwater is the existing flora which has already been assessed as being of low conservation value being highly disturbed with largely introduced species including a number of priority weed species. It is also understood that the future development of the Site will require the majority if not the entirely of the Site to be further disturbed and/or cleared, effectively removing the only onsite ecological receptor to groundwater. As a result, the exposure pathway to impacts from onsite groundwater is incomplete and so the associated risk to ecological receptors is considered negligible.

#### *5.5.2.2 Off site*

Biodiversity Development Assessment Report (2020), (Ref.3) identified four (4) nationally threatened ecological communities and 46 nationally threatened species as having potential habitat within 10 km of the Site.

Mapping of the groundwater flow through the Site has found that the disturbed nature of the subsurface and the position of the large concrete footing in the centre of the Site appears to be affecting the groundwater flow direction. Because of this the groundwater appears to be exiting the site via the eastern boundary rather than the southern boundary which was expected based on the topography. This means that although GW3 is positioned towards the inferred point of egress, there is no well in a position to provide definitive values for concentrations of contaminants of concern (COC) in groundwater migrating from the Site.

Although remaining elevated, the concentrations of Cr and Zn in GW3 are the lowest of the on-site wells (GW4 representing Background concentrations) indicating potential for some attenuation of Cr and Zn in groundwater to be occurring onsite. Conversely, Cu concentrations increase from Background to GW3, indicating that the Site is contributing to impacts of Cu in groundwater.

Based on the above, it is considered that there is potential for risk to off-site ecological communities and species previously identified, as having potential for habitat around the Site from groundwater migrating from the Site. However, due to the limitations of well placement and indications for attenuation to be occurring, the risk associated with concentrations of COC in groundwater migrating from the Site cannot be clearly defined in this assessment.

Observations of vegetation beyond the Site boundary did not show evidence of plant stress occurring, with established vegetation appearing healthy and evidence of vegetation repopulating cleared areas particularly to the east and south of the Site boundary.

It is also understood that the future development of the Site will result in the majority, if not the entirely of the Site having a low permeability surface, due to the placement of building slabs and pavements, significantly reducing not only infiltration rates of rainwater through impacted soils, but also having the likelihood of reducing groundwater flow through the Site. Any reduction in concentrations of COC impacting groundwater via infiltration, combined with reduction of flow rate of groundwater through the Site is likely to result in overall reductions in COC potentially migrating from the Site, due to the combined mechanisms of source reduction and impact attenuation.

Taking into account the above factors potential risk to off-site receptors from groundwater migrating from the Site is considered low with future risk likely to reduce as a result of the nature of the proposed development.

# 6 Duty to Report

The NSW EPA Duty to report guidelines (August 2020) state that with respect to on-site soil contamination:

*For the purposes of section 60(3)(b) of the CLM Act, notification of contamination in, or on, soil on the land is required where:*

- *the 95 % upper confidence limit on the arithmetic average concentration of a contaminant in or on soil is equal to or above the Health Investigation Level and/or Health Screening Level for that contaminant for the current or approved use of the respective on-site land, as specified in Section 6, Schedule B1 of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013)*

*OR*

- *the concentration of a contaminant in an individual soil sample is equal to or more than 250% of the Health Investigation Level and/or Health Screening Level for that contaminant for the current or approved use of the respective on-site land, as specified in Section 6, Schedule B1 of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013)*

*AND*

- *a person has been or foreseeably will be exposed to the contaminant or a by-product of the contaminant.*

The CLM Act uses the key concept of 'foreseeable' to determine the likelihood of the presence of contamination or potential routes for its migration. Foreseeability depends on a number of considerations, including:

- the physical and chemical properties of the contaminants
- the quantity of the contaminants
- the location of the site
- the geological and hydrogeological conditions (soil stratigraphy, depth to groundwater, and direction and rate of groundwater or surface water flow)
- the potential fate and transport mechanisms.

As:

- the metal impacts in shallow soil on the Site are unlikely to migrate from the site;
- potential on-site ecological receptors of soil and/or groundwater are of low conservation value and/or are either;
    - proposed for removal during development; or
    - have not been proven to exist on the Site;
- off-site migration of contamination in groundwater has not been proven; and
- observations of both on and off-site flora do not indicate stress due to groundwater impacts;

it could be argued that the definition of 'foreseeable exposure' to the soil and/or groundwater impacts as they apply to the Site based on the available are not yet proven to have been met, and so there is currently no duty to report the site, based on environmental / ecological considerations.

However:

- Further investigation of off-site groundwater conditions close to the Site may change this assessment, if off-site migration of elevated concentrations of COC (i.e. above Background) is found to be occurring.

# 7 Conclusions and Recommendations

## 7.1 Soil

Based on the results of the investigation four (4) COC were detected in soil in concentrations greater than the respective SACs (As, Cu, Pb & Zn), but Pb was not detected in hotspot concentrations. Zinc has been detected in concentrations exceeding the SAC in 24 of 25 locations sampled with hotspots concentrations detected in 21 of 25 locations.

The results indicate that significant potential risk to on-site receptors exists however, onsite receptors have been assessed as being limited, so potential risk to on-site receptors could be considered to be low.

Based on the surface condition of the site at the time of assessment, off-site migration potential of impacted soils due to environmental factors such as wind and erosion from surface water runoff is low, and so the potential risk to off-site receptors due to migration of impacted soils from the Site is also considered low.

## 7.2 Groundwater

Based on the results of the investigation three (3) COC were detected in groundwater in concentrations greater than the respective SACs (Cu, Cr & Zn). Of these COC, Cr and Zn were detected in Background sample (GW4) in concentrations already exceeding the respective SACs, that is groundwater entering the Site from upgradient exceeds the SAC for both Cr and Zn.

### 7.2.1 On-site Groundwater Risk

The only on-site ecological receptor of groundwater is the existing flora which has already been assessed as being of low conservation value being highly disturbed with largely introduced species including a number of priority weed species. It is also understood that the future development of the Site will require the majority if not the entirely of the Site to be further disturbed and/or cleared, effectively removing the only onsite ecological receptor to groundwater. As a result, the exposure pathway to impacts from onsite groundwater is incomplete and so the associated risk to ecological receptors is considered negligible.

### 7.2.2 Off-site Groundwater Risk

Due to the limitations of well placement and indications for attenuation to be occurring, the risk associated with concentrations of COC in groundwater migrating from the Site cannot be clearly defined in this assessment. Observations of vegetation beyond the Site boundary did not show evidence of plant stress occurring, with established vegetation appearing healthy and evidence of vegetation repopulating cleared areas particularly to the east and south of the Site boundary.

It is also understood that the future development of the Site will result in the majority, if not the entirely of the Site having a low permeability surface. Any reduction in concentrations of COC impacting groundwater via infiltration, combined with reduction of flow rate of groundwater through the Site is likely to result in overall reductions in COC potentially migrating from the Site, due to the combined mechanisms of source reduction and impact attenuation.

Taking into account the above factors potential risk to off-site receptors from groundwater migrating from the Site is currently considered low with future risk likely to reduce as a result of the nature of the proposed development.

### 7.2.3 Duty to Report

Based on the findings of this assessment it could be argued that the definition of 'foreseeable exposure' to the soil and/or groundwater impacts as they apply to the Site based on the available are not yet proven to have been met, and so there is currently no duty to report the site, due to environmental / ecological considerations.

However, further investigation of off-site groundwater conditions close to the Site may change this conclusion, if off-site migration of elevated concentrations of COC (i.e. above Background) in groundwater is found to be occurring.

# 8 References

1. Preliminary Contamination Assessment (PCA) report prepared by JM Environments (JME), (Ref: JME2005-1, 22 April 2020).
2. National Environmental Protection Council, National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B4 – Guideline on Site Specific Risk Assessments.
3. Wildthing Environmental Consultants - Biodiversity Development Assessment Report for a Resource Recovery Facility at 21D, 21F and part 35A School Drive Tomago NSW (Project No 12490, Version 2, 11 August 2020).
4. National Environmental Protection Council, National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater.
5. NSW EPA Contaminated Sites: Sampling Design Guidelines, 1995.
6. NSW EPA Guidelines on the Duty to Report Contamination under the *Contaminated Land Management Act 1997*; August 2020.

# 9 Limitations

Observations and sampling/test results were indicative of the conditions present at the time of our investigation are a snapshot of conditions as they were at the time of the investigation, and may not be representative of past or future conditions.

Our report is limited in to the agreed scope of works outlined in our fee proposal.

The report has been prepared for the benefit of the Client and no other party. EHO Consulting assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of EHO Consulting or for any loss or damage suffered by any other party in relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

EHO Consulting will not be liable to update or revise the report to take into account any events, emergent circumstances or facts occurring or becoming apparent after the date of the report.

The scope of services did not include any assessment of the title to nor ownership of the properties, buildings and structures referred to in the report, nor the application or interpretation of laws in the jurisdiction in which those properties, buildings and structures are located.

# APPENDIX A - FIGURES




**FIGURE 1 – SITE LOCATION**

21G & 21F SCHOOL DRIVE TOMAGO NSW 2322




Testpit – EHO Consulting 4/6/20

Testpit – JM Environments 6-7/4/20

**FIGURE 2 – TEST PIT LOCATIONS**

21G & 21F SCHOOL DRIVE TOMAGO NSW 2322




Testpit – JM Environments 6-7/4/20

Arsenic SAC (NEPM 2013) - 160 mg/kg

**FIGURE 2A – ARSENIC EXCEEDANCES**

21G & 21F SCHOOL DRIVE TOMAGO NSW 2322

**APPENDIX A**




Testpit – EHO Consulting 4/6/20

Testpit – JM Environments 6-7/4/20

Copper SAC (NEPM 2013) - 140 mg/kg

**FIGURE 2B – COPPER EXCEEDANCES**

21G & 21F SCHOOL DRIVE TOMAGO NSW 2322

**APPENDIX A**



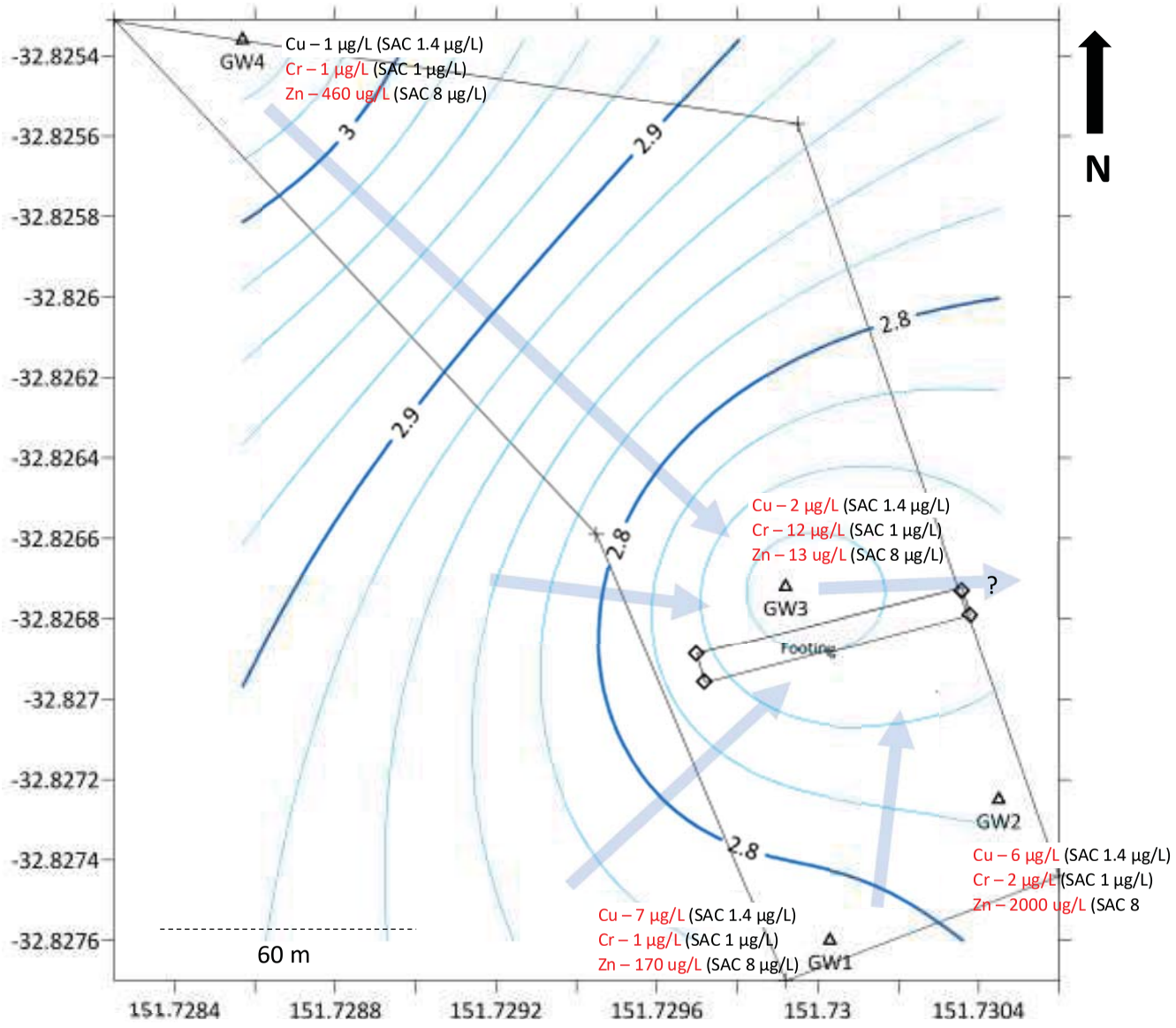

Testpit – EHO Consulting 4/6/20

Testpit – JM Environments 6-7/4/20

Zinc SAC (NEPM 2013) - 360 mg/kg

**FIGURE 2C – ZINC EXCEEDANCES IN SOIL**

21G & 21F SCHOOL DRIVE TOMAGO NSW 2322




? Inferred groundwater direction

Groundwater contours (m AHD)

SAC – NEPM 2013

**FIGURE 3 – GROUNDWATER RESULTS**

21G & 21F SCHOOL DRIVE TOMAGO NSW 2322

# APPENDIX B – RESULTS SUMMARY TABLES

**Result Summary Table**
**Soil - General Site**

| | | | Analyte Name | Arsenic, As | Chromium, Cr | Copper, Cu | Lead, Pb | Nickel, Ni | Zinc, Zn |
|---|---|---|---|---|---|---|---|---|---|
| 1. NEPM Table 1B(1) Zn ACL - Commercial Industrial (pH 6, CEC 5) | | | | | | | | | 360 |
| 2. NEPM Table 1B(2) Cu ACL - Commercial Industrial (CEC 5) | | | | | | 140 | | | |
| 3. NEPM Table 1B(3) Cr III and Ni ACL - Commercial Industrial (Clay content 1%, CEC 5) | | | | | 310 | | | 55 | |
| 4. NEPM Table 1B(4) Pb ACL- Commercial Industrial | | | | | | | 1800 | | |
| 5. NEPM Table 1B(5) As EIL- Commercial Industrial | | | | 160 | | | | | |
| | | | Units | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| **Description** | **Sample Date** | **Matrix** | **Reporting Limit** | 1 | 0.5 | 0.5 | 1 | 0.5 | 2 |
| TP1 0.0 | 06-04-20 | Soil | **Result** | 6 | 42 | 56 | 70 | 17 | **1300** |
| TP1 1.6 | 06-04-20 | Soil | **Result** | 80 | 11 | 53 | 33 | 11 | **510** |
| TP2 0.0 | 06-04-20 | Soil | **Result** | 6 | 3.6 | 11 | 9 | 9.8 | 74 |
| TP2 0.7 | 06-04-20 | Soil | **Result** | 7 | 8.2 | 67 | 120 | 4.1 | **13000** |
| TP3 0.0 | 06-04-20 | Soil | **Result** | 100 | 31 | **680** | 840 | 4.8 | **13000** |
| TP3 0.55 | 06-04-20 | Soil | **Result** | *1* | *0.3* | 1.3 | 2 | *0.5* | 33 |
| TP4 0.0 | 06-04-20 | Soil | **Result** | 3 | 7.3 | 22 | 34 | 7.1 | **400** |
| TP4 0.7 | 06-04-20 | Soil | **Result** | *1* | 1.4 | 2.8 | 4 | 0.9 | 59 |
| TP5 0.0 | 06-04-20 | Soil | **Result** | **900** | 61 | **1700** | 940 | 52 | **18000** |
| TP5 0.5 | 06-04-20 | Soil | **Result** | 1 | 0.6 | 3.7 | 5 | *0.5* | 65 |
| TP6 1.0 | 06-04-20 | Soil | **Result** | *1* | 1.4 | 0.9 | 2 | *0.5* | 56 |
| TP7 0.0 | 06-04-20 | Soil | **Result** | **940** | 72 | **2100** | 1100 | 38 | **25000** |
| TP7 0.6 | 06-04-20 | Soil | **Result** | 2 | 3.9 | 18 | 33 | 0.8 | **430** |
| TP12 0.0 | 06-04-20 | Soil | **Result** | 3 | 8.2 | 13 | 25 | 3.7 | **370** |
| TP12 0.5 | 06-04-20 | Soil | **Result** | 29 | 7.8 | 55 | 71 | 8.4 | **900** |
| TP12 0.7 | 06-04-20 | Soil | **Result** | *1* | 1.9 | 3.5 | 6 | 0.8 | 69 |
| TP13 0.0 | 06-04-20 | Soil | **Result** | 17 | 11 | 66 | 75 | 16 | **1200** |
| TP13 0.3 | 06-04-20 | Soil | **Result** | 100 | 27 | **520** | 1100 | 5.1 | **10000** |
| TP13 0.5 | 06-04-20 | Soil | **Result** | 4 | 3.1 | 25 | 62 | *0.5* | **490** |
| TP14 0.3 | 06-04-20 | Soil | **Result** | 11 | 18 | 65 | 120 | 1.4 | **2500** |
| TP14 0.5 | 06-04-20 | Soil | **Result** | *1* | 2.9 | 0.8 | 2 | *0.5* | 170 |
| TP15 0.0 | 06-04-20 | Soil | **Result** | 4 | 5.8 | 14 | 27 | 2.7 | **400** |
| TP15 0.5 | 06-04-20 | Soil | **Result** | 1 | 11 | 1.8 | 17 | 0.8 | **480** |
| TP16 0.5 | 06-04-20 | Soil | **Result** | 1 | 20 | 2.1 | 28 | 1.3 | **750** |
| TP17 0.3 | 06-04-20 | Soil | **Result** | 72 | 32 | **620** | 1000 | 7.2 | **16000** |
| TP18 0.0 | 06-04-20 | Soil | **Result** | 5 | 110 | 58 | 100 | 5.5 | **980** |
| TP19 0.0 | 06-04-20 | Soil | **Result** | 4 | 42 | 100 | 190 | 14 | **2400** |
| TP19 0.4 | 06-04-20 | Soil | **Result** | 5 | 15 | **250** | 410 | 1.6 | **3600** |
| TP20 0.0 | 06-04-20 | Soil | **Result** | *1* | 1.7 | 1.6 | 3 | 1.3 | 29 |
| TP20 0.4 | 06-04-20 | Soil | **Result** | *1* | 17 | 21 | 55 | 1.5 | **2200** |
| TP21 0.0 | 06-04-20 | Soil | **Result** | 4 | 4.9 | 21 | 43 | 4.8 | **480** |
| TP21 1.0 | 06-04-20 | Soil | **Result** | 110 | 15 | **440** | 660 | 3.9 | **5800** |
| | | | **Average** | 83 | 19 | 243 | 248 | 7 | **3781** |
| | | | **Count** | 32 | 32 | 32 | 32 | 32 | 32 |

**Result Summary Table**
**Soil - Metals Area**

EHO CONSULTING
ENVIRONMENTAL HAZMAT OCCUPATIONAL

| | | | Analyte Name | Arsenic, As | Chromium, Cr | Copper, Cu | Lead, Pb | Nickel, Ni | Zinc, Zn |
|---|---|---|---|---|---|---|---|---|---|
| 1. NEPM Table 1B(1) Zn ACL - Commercial Industrial (pH 6, CEC 5) | | | | | | | | | 360 |
| 2. NEPM Table 1B(2) Cu ACL - Commercial Industrial (CEC 5) | | | | | | 140 | | | |
| 3. NEPM Table 1B(3) Cr III and Ni ACL - Commercial Industrial (Clay content 1%, CEC 5) | | | | | 310 | | | 55 | |
| 4. NEPM Table 1B(4) Pb ACL- Commercial Industrial | | | | | | | 1800 | | |
| 5. NEPM Table 1B(5) As EIL- Commercial Industrial | | | | 160 | | | | | |
| | | | Units | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| **Description** | **Sample Date** | **Matrix** | **Reporting Limit** | 1 | 0.5 | 0.5 | 1 | 0.5 | 2 |
| TP8 0.0 | 06-04-20 | Soil | **Result** | **1000** | 37 | **2400** | **4200** | 26 | **27000** |
| TP8 0.7 | 06-04-20 | Soil | **Result** | *1* | 2.8 | 11 | 18 | *0.5* | 170 |
| TP9 0.3 | 06-04-20 | Soil | **Result** | 24 | 7.9 | 40 | 46 | 6.3 | **1100** |
| TP9 0.5 | 06-04-20 | Soil | **Result** | 6 | 6 | 41 | 60 | 7.5 | **780** |
| TP10 0.0 | 06-04-20 | Soil | **Result** | 27 | 6.7 | 71 | 83 | 10 | **1200** |
| TP10 0.3 | 06-04-20 | Soil | **Result** | *1* | 1.8 | 11 | 12 | *0.5* | 170 |
| TP10 0.6 | 06-04-20 | Soil | **Result** | 1 | 4.7 | 21 | 36 | 0.7 | 430 |
| TP11 0.0 | 06-04-20 | Soil | **Result** | 12 | 13 | 66 | 83 | 11 | **1600** |
| TP11 0.2 | 06-04-20 | Soil | **Result** | *1* | 3.9 | 4 | 6 | *0.5* | **620** |
| TP-25 | 4-6-2020 | Soil | **Result** | 72 | 22 | **340** | 500 | 4.6 | **8500** |
| TP-26 | 4-6-2020 | Soil | **Result** | 6 | 4.5 | **8.3** | **5** | 9.1 | 41 |
| TP-27 | 4-6-2020 | Soil | **Result** | 130 | 32 | **1100** | **2700** | 5.5 | **22000** |
| TP-28 | 4-6-2020 | Soil | **Result** | 25 | 31 | **260** | 330 | 8.6 | **6200** |
| TP-29 | 4-6-2020 | Soil | **Result** | 18 | 35 | **280** | 520 | 3.1 | **8300** |
| TP-30 | 4-6-2020 | Soil | **Result** | 6 | 4.8 | **9.0** | 7 | 9.7 | 54 |
| TP-31 | 4-6-2020 | Soil | **Result** | 21 | 18 | **460** | 790 | 2.9 | **12000** |
| | | | **Average** | 84 | 14 | **320** | 587 | **7** | **5635** |
| | | | **Count** | 16 | 16 | 16 | 16 | 16 | 16 |

**Result Summary Table**
**Groundwater**

| | | | Analyte Name | Arsenic, As | Cadmium, Cd | Copper, Cu | Chromium, Cr | Nickel, Ni | Lead, Pb | Zinc, Zn | Mercury |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. NEPM Table 1C GILs - Fresh Waters | | | | 13 | 0.2 | 1.4 | 1 | 11 | 3.4 | 8 | 0.06 |
| | | | **Units** | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | mg/L |
| **Description** | **Sample Date** | **Matrix** | **Reporting Limit** | 1 | 0.1 | 1 | 1 | 1 | 1 | 5 | 0.0001 |
| GW1 | 12-5-2020 | Water | **Result** | **1** | **0.1** | **7** | **1** | **7** | <1 | **170** | <0.0001 |
| GW2 | 12-5-2020 | Water | **Result** | <1 | **0.1** | **6** | **2** | **4** | <1 | **2000** | <0.0001 |
| GW3 | 12-5-2020 | Water | **Result** | <1 | <0.1 | **2** | **12** | <1 | <1 | **13** | <0.0001 |
| GW4 | 12-5-2020 | Water | **Result** | <1 | **0.1** | **1** | **1** | **2** | <1 | **460** | <0.0001 |

# APPENDIX C – LABORATORY CERTIFICATES OF ANALYSIS

# ANALYTICAL REPORT

Accreditation No. 2562

| CLIENT DETAILS | | LABORATORY DETAILS | |
|---|---|---|---|
| Contact | Craig Wellings | Manager | Huong Crawford |
| Client | EHO CONSULTING PTY LIMITED | Laboratory | SGS Alexandria Environmental |
| Address | 16/380 PENNANT HILLS ROAD<br>PENNANT HILLS NSW 2120 | Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | (Not specified) | Telephone | +61 2 8594 0400 |
| Facsimile | (Not specified) | Facsimile | +61 2 8594 0499 |
| Email | craig@ehoc.com.au | Email | au.environmental.sydney@sgs.com |
| Project | **JN1446 Tomago** | SGS Reference | **SE207183 R0** |
| Order Number | **JN1446** | Date Received | 05 Jun 2020 |
| Samples | 31 | Date Reported | 15 Jun 2020 |

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.

Asbestos analysed by Approved Identifiers Ravee Sivasubramaniam and Yusuf Kuthpudin .

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Dong LIANG
Metals/Inorganics Team Leader

Kamrul AHSAN
Senior Chemist

Ly Kim HA
Organic Section Head

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

Yusuf KUTHPUDIN
Asbestos Analyst

| Parameter | Units | LOR | Sample Number: SE207183.001<br>Sample Matrix: Soil<br>Sample Date: 04 Jun 2020<br>Sample Name: WC-1 | SE207183.002<br>Soil<br>04 Jun 2020<br>WC-2 | SE207183.003<br>Soil<br>04 Jun 2020<br>WC-3 | SE207183.004<br>Soil<br>04 Jun 2020<br>WC-4 |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433 Tested: 9/6/2020** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | **108** | **109** | **102** | **106** |
| d8-toluene (Surrogate) | % | - | **106** | **108** | **100** | **105** |
| Bromofluorobenzene (Surrogate) | % | - | **97** | **97** | **89** | **94** |
| Totals | | | | | | |
| 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 |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 9/6/2020** | | | | | | |
| TRH C6-C10 | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| Surrogates | | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | **108** | **109** | **102** | **106** |
| d8-toluene (Surrogate) | % | - | **106** | **108** | **100** | **105** |
| Bromofluorobenzene (Surrogate) | % | - | **97** | **97** | **89** | **94** |
| VPH F Bands | | | | | | |
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | <25 | <25 | <25 | <25 |

| Parameter | Units | LOR | Sample Number: SE207183.001 Sample Matrix: Soil Sample Date: 04 Jun 2020 Sample Name: WC-1 | SE207183.002 Soil 04 Jun 2020 WC-2 | SE207183.003 Soil 04 Jun 2020 WC-3 | SE207183.004 Soil 04 Jun 2020 WC-4 |
|---|---|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 9/6/2020** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| 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 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 9/6/2020** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 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 |
| Benzo(k)fluoranthene | mg/kg | 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 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 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 |
| Benzo(ghi)perylene | mg/kg | 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 |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 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 |
| Total PAH (18) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **98** | **98** | **94** | **91** |
| 2-fluorobiphenyl (Surrogate) | % | - | **85** | **93** | **94** | **86** |
| d14-p-terphenyl (Surrogate) | % | - | **97** | **103** | **116** | **115** |
| **Speciated Phenols in Soil Method: AN420 Tested: 9/6/2020** | | | | | | |
| Phenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2-methyl phenol (o-cresol) | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | <1 | <1 | <1 | <1 |
| Total Cresol | mg/kg | 1.5 | <1.5 | <1.5 | <1.5 | <1.5 |
| 2-chlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dimethylphenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,6-dichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4,6-trichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2-nitrophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 4-nitrophenol | mg/kg | 1 | <1 | <1 | <1 | <1 |
| 2,4,5-trichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | <1 | <1 | <1 | <1 |
| Pentachlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dinitrophenol | mg/kg | 2 | <2 | <2 | <2 | <2 |
| 4-chloro-3-methylphenol | mg/kg | 2 | <2 | <2 | <2 | <2 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.001<br>Soil<br>04 Jun 2020<br>WC-1 | SE207183.002<br>Soil<br>04 Jun 2020<br>WC-2 | SE207183.003<br>Soil<br>04 Jun 2020<br>WC-3 | SE207183.004<br>Soil<br>04 Jun 2020<br>WC-4 |
|---|---|---|---|---|---|---|---|
| **Speciated Phenols in Soil Method: AN420 Tested: 9/6/2020 (continued)** | | | | | | | |
| Surrogates | | | | | | | |
| 2,4,6-Tribromophenol (Surrogate) | % | - | | **81** | **81** | **85** | **84** |
| d5-phenol (Surrogate) | % | - | | **78** | **76** | **84** | **81** |
| **OC Pesticides in Soil Method: AN420 Tested: 9/6/2020** | | | | | | | |
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Alpha BHC | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Lindane | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Heptachlor | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Aldrin | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Beta BHC | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Delta BHC | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Heptachlor epoxide | mg/kg | 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 |
| Alpha Endosulfan | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | <0.2 |
| Gamma Chlordane | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Alpha Chlordane | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| trans-Nonachlor | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| p,p'-DDE | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Dieldrin | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | <0.2 |
| Endrin | mg/kg | 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 |
| o,p'-DDT | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Beta Endosulfan | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | <0.2 |
| p,p'-DDD | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| p,p'-DDT | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Endosulfan sulphate | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Endrin Aldehyde | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Methoxychlor | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Endrin Ketone | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Isodrin | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Mirex | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Total CLP OC Pesticides | mg/kg | 1 | | <1 | <1 | <1 | <1 |
| Surrogates | | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | | **107** | **107** | **106** | **91** |
| **OP Pesticides in Soil Method: AN420 Tested: 9/6/2020** | | | | | | | |
| Dichlorvos | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Dimethoate | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Diazinon (Dimpylate) | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Fenitrothion | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | <0.2 |
| Malathion | mg/kg | 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 |
| Parathion-ethyl (Parathion) | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | <0.2 |
| Bromophos Ethyl | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | <0.2 |
| Methidathion | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Ethion | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | <0.2 |
| Azinphos-methyl (Guthion) | mg/kg | 0.2 | | **0.3** | <0.2 | <0.2 | <0.2 |
| Total OP Pesticides* | mg/kg | 1.7 | | <1.7 | <1.7 | <1.7 | <1.7 |
| Surrogates | | | | | | | |
| 2-fluorobiphenyl (Surrogate) | % | - | | **85** | **93** | **94** | **86** |
| d14-p-terphenyl (Surrogate) | % | - | | **97** | **103** | **116** | **115** |

| Parameter | Units | LOR | Sample Number: SE207183.001<br>Sample Matrix: Soil<br>Sample Date: 04 Jun 2020<br>Sample Name: WC-1 | SE207183.002<br>Soil<br>04 Jun 2020<br>WC-2 | SE207183.003<br>Soil<br>04 Jun 2020<br>WC-3 | SE207183.004<br>Soil<br>04 Jun 2020<br>WC-4 |
|---|---|---|---|---|---|---|
| **PCBs in Soil Method: AN420 Tested: 9/6/2020** | | | | | | |
| Arochlor 1016 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1221 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1232 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1242 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1248 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1254 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1260 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1262 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1268 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Total PCBs (Arochlors) | mg/kg | 1 | <1 | <1 | <1 | <1 |
| Surrogates | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | **107** | **107** | **106** | **91** |
| **Total Cyanide in soil by Discrete Analyser (Aquakem) Method: AN077/AN287 Tested: 15/6/2020** | | | | | | |
| Total Cyanide | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Cyanide Amenable to Chlorination* | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| **Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 9/6/2020** | | | | | | |
| Arsenic, As | mg/kg | 1 | **4** | **2** | **3** | **28** |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | **0.4** |
| Chromium, Cr | mg/kg | 0.5 | **11** | **7.8** | **27** | **16** |
| Copper, Cu | mg/kg | 0.5 | **22** | **16** | **55** | **75** |
| Nickel, Ni | mg/kg | 0.5 | **5.5** | **4.8** | **12** | **7.6** |
| Lead, Pb | mg/kg | 1 | **40** | **28** | **98** | **100** |
| Zinc, Zn | mg/kg | 2 | **580** | **420** | **1800** | **1200** |
| **Mercury in Soil Method: AN312 Tested: 9/6/2020** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002 Tested: 9/6/2020** | | | | | | |
| % Moisture | %w/w | 1 | **6.9** | **4.7** | **7.4** | **9.8** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.001<br>Soil<br>04 Jun 2020<br>WC-1 | SE207183.002<br>Soil<br>04 Jun 2020<br>WC-2 | SE207183.003<br>Soil<br>04 Jun 2020<br>WC-3 | SE207183.004<br>Soil<br>04 Jun 2020<br>WC-4 |
|---|---|---|---|---|---|---|---|
| **Fibre Identification in soil Method: AN602 Tested: 15/6/2020** | | | | | | | |
| FibreID | | | | | | | |
| Asbestos Detected | No unit | - | | - | - | - | - |
| SemiQuant | | | | | | | |
| Estimated Fibres* | %w/w | 0.01 | | - | - | - | - |
| **Fibre ID in bulk materials Method: AN602 Tested: 15/6/2020** | | | | | | | |
| FibreID | | | | | | | |
| Asbestos Detected | No unit | - | | - | - | - | - |

| Parameter | Units | LOR | Sample Number: SE207183.005<br>Sample Matrix: Soil<br>Sample Date: 04 Jun 2020<br>Sample Name: WC-5 | SE207183.006<br>Soil<br>04 Jun 2020<br>WC-6 | SE207183.007<br>Soil<br>04 Jun 2020<br>WC-7 | SE207183.008<br>Soil<br>04 Jun 2020<br>WC-8 |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433 Tested: 9/6/2020** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethylbenzene | mg/kg | 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 |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | **0.1** | <0.1 |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogates | | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | **120** | **116** | **112** | **105** |
| d8-toluene (Surrogate) | % | - | **119** | **114** | **111** | **104** |
| Bromofluorobenzene (Surrogate) | % | - | **105** | **99** | **97** | **89** |
| Totals | | | | | | |
| 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 |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 9/6/2020** | | | | | | |
| TRH C6-C10 | mg/kg | 25 | <25 | <25 | <25 | <25 |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| Surrogates | | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | **120** | **116** | **112** | **105** |
| d8-toluene (Surrogate) | % | - | **119** | **114** | **111** | **104** |
| Bromofluorobenzene (Surrogate) | % | - | **105** | **99** | **97** | **89** |
| VPH F Bands | | | | | | |
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | <25 | <25 | <25 | <25 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE207183.005<br>Soil<br>04 Jun 2020<br>WC-5 | SE207183.006<br>Soil<br>04 Jun 2020<br>WC-6 | SE207183.007<br>Soil<br>04 Jun 2020<br>WC-7 | SE207183.008<br>Soil<br>04 Jun 2020<br>WC-8 |
|---|---|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 9/6/2020** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | <20 |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | **55** | <45 |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | <45 |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | <100 |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | <110 |
| TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | <210 | <210 | <210 |
| TRH F Bands | | | | | | |
| 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 | <90 | <90 | <90 |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | <120 |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 9/6/2020** | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 2-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.1** |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | **0.1** | **0.2** |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 | **0.2** | **0.2** | **0.4** |
| Pyrene | mg/kg | 0.1 | <0.1 | **0.2** | **0.2** | **0.3** |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | **0.1** | **0.1** | **0.2** |
| Chrysene | mg/kg | 0.1 | <0.1 | **0.2** | **0.2** | **0.3** |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | **0.1** | **0.2** | **0.2** | **0.3** |
| Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | **0.1** | **0.2** | **0.2** |
| Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | **0.1** | **0.1** | **0.2** |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | **0.2** |
| Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(ghi)perylene | mg/kg | 0.1 | <0.1 | **0.1** | **0.1** | **0.2** |
| Carcinogenic PAHs, BaP TEQ <LOR=0 | TEQ (mg/kg) | 0.2 | <0.2 | <0.2 | <0.2 | **0.3** |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 0.3 | <0.3 | <0.3 | <0.3 | **0.4** |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | TEQ (mg/kg) | 0.2 | <0.2 | **0.2** | **0.2** | **0.4** |
| Total PAH (18) | mg/kg | 0.8 | <0.8 | **1.1** | **1.4** | **2.9** |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | **1.1** | **1.4** | **2.9** |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **93** | **93** | **89** | **96** |
| 2-fluorobiphenyl (Surrogate) | % | - | **94** | **94** | **98** | **99** |
| d14-p-terphenyl (Surrogate) | % | - | **89** | **84** | **97** | **90** |
| **Speciated Phenols in Soil Method: AN420 Tested: 9/6/2020** | | | | | | |
| Phenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2-methyl phenol (o-cresol) | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | <1 | <1 | <1 | <1 |
| Total Cresol | mg/kg | 1.5 | <1.5 | <1.5 | <1.5 | <1.5 |
| 2-chlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dimethylphenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,6-dichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4,6-trichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2-nitrophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 4-nitrophenol | mg/kg | 1 | <1 | <1 | <1 | <1 |
| 2,4,5-trichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | <1 | <1 | <1 | <1 |
| Pentachlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| 2,4-dinitrophenol | mg/kg | 2 | <2 | <2 | <2 | <2 |
| 4-chloro-3-methylphenol | mg/kg | 2 | <2 | <2 | <2 | <2 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.005<br>Soil<br>04 Jun 2020<br>WC-5 | SE207183.006<br>Soil<br>04 Jun 2020<br>WC-6 | SE207183.007<br>Soil<br>04 Jun 2020<br>WC-7 | SE207183.008<br>Soil<br>04 Jun 2020<br>WC-8 |
|---|---|---|---|---|---|---|---|
| **Speciated Phenols in Soil Method: AN420 Tested: 9/6/2020 (continued)** | | | | | | | |
| Surrogates | | | | | | | |
| 2,4,6-Tribromophenol (Surrogate) | % | - | | **86** | **86** | **87** | **89** |
| d5-phenol (Surrogate) | % | - | | **82** | **83** | **83** | **85** |
| **OC Pesticides in Soil Method: AN420 Tested: 9/6/2020** | | | | | | | |
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Alpha BHC | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Lindane | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Heptachlor | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Aldrin | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Beta BHC | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Delta BHC | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Heptachlor epoxide | mg/kg | 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 |
| Alpha Endosulfan | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | <0.2 |
| Gamma Chlordane | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Alpha Chlordane | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| trans-Nonachlor | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| p,p'-DDE | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Dieldrin | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | <0.2 |
| Endrin | mg/kg | 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 |
| o,p'-DDT | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Beta Endosulfan | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | <0.2 |
| p,p'-DDD | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| p,p'-DDT | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Endosulfan sulphate | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Endrin Aldehyde | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Methoxychlor | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Endrin Ketone | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Isodrin | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Mirex | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | <0.1 |
| Total CLP OC Pesticides | mg/kg | 1 | | <1 | <1 | <1 | <1 |
| Surrogates | | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | | **107** | **111** | **106** | **109** |
| **OP Pesticides in Soil Method: AN420 Tested: 9/6/2020** | | | | | | | |
| Dichlorvos | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Dimethoate | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Diazinon (Dimpylate) | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Fenitrothion | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | <0.2 |
| Malathion | mg/kg | 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 |
| Parathion-ethyl (Parathion) | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | <0.2 |
| Bromophos Ethyl | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | <0.2 |
| Methidathion | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | <0.5 |
| Ethion | mg/kg | 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 |
| Total OP Pesticides* | mg/kg | 1.7 | | <1.7 | <1.7 | <1.7 | <1.7 |
| Surrogates | | | | | | | |
| 2-fluorobiphenyl (Surrogate) | % | - | | **94** | **94** | **98** | **99** |
| d14-p-terphenyl (Surrogate) | % | - | | **89** | **84** | **97** | **90** |

| Parameter | Units | LOR | Sample Number: SE207183.005<br>Sample Matrix: Soil<br>Sample Date: 04 Jun 2020<br>Sample Name: WC-5 | SE207183.006<br>Soil<br>04 Jun 2020<br>WC-6 | SE207183.007<br>Soil<br>04 Jun 2020<br>WC-7 | SE207183.008<br>Soil<br>04 Jun 2020<br>WC-8 |
|---|---|---|---|---|---|---|
| **PCBs in Soil Method: AN420 Tested: 9/6/2020** | | | | | | |
| Arochlor 1016 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1221 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1232 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1242 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1248 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1254 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1260 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1262 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Arochlor 1268 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Total PCBs (Arochlors) | mg/kg | 1 | <1 | <1 | <1 | <1 |
| Surrogates | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | **107** | **111** | **106** | **109** |
| **Total Cyanide in soil by Discrete Analyser (Aquakem) Method: AN077/AN287 Tested: 15/6/2020** | | | | | | |
| Total Cyanide | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Cyanide Amenable to Chlorination* | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| **Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 9/6/2020** | | | | | | |
| Arsenic, As | mg/kg | 1 | **5** | **9** | **23** | **8** |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | **0.3** | **0.6** | **0.3** |
| Chromium, Cr | mg/kg | 0.5 | **57** | **27** | **35** | **29** |
| Copper, Cu | mg/kg | 0.5 | **110** | **190** | **200** | **140** |
| Nickel, Ni | mg/kg | 0.5 | **9.3** | **8.6** | **19** | **12** |
| Lead, Pb | mg/kg | 1 | **190** | **220** | **350** | **270** |
| Zinc, Zn | mg/kg | 2 | **3100** | **4000** | **6400** | **4600** |
| **Mercury in Soil Method: AN312 Tested: 9/6/2020** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002 Tested: 9/6/2020** | | | | | | |
| % Moisture | %w/w | 1 | **6.6** | **5.6** | **7.5** | **8.4** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.005<br>Soil<br>04 Jun 2020<br>WC-5 | SE207183.006<br>Soil<br>04 Jun 2020<br>WC-6 | SE207183.007<br>Soil<br>04 Jun 2020<br>WC-7 | SE207183.008<br>Soil<br>04 Jun 2020<br>WC-8 |
|---|---|---|---|---|---|---|---|
| **Fibre Identification in soil Method: AN602 Tested: 15/6/2020** | | | | | | | |
| FibreID | | | | | | | |
| Asbestos Detected | No unit | - | | - | - | - | - |
| SemiQuant | | | | | | | |
| Estimated Fibres* | %w/w | 0.01 | | - | - | - | - |
| **Fibre ID in bulk materials Method: AN602 Tested: 15/6/2020** | | | | | | | |
| FibreID | | | | | | | |
| Asbestos Detected | No unit | - | | - | - | - | - |

| Parameter | Units | LOR | Sample Number: SE207183.009<br>Sample Matrix: Soil<br>Sample Date: 04 Jun 2020<br>Sample Name: WC-9 | SE207183.010<br>Soil<br>04 Jun 2020<br>WC-10 | SE207183.011<br>Soil<br>04 Jun 2020<br>WC-11 | SE207183.012<br>Material<br>04 Jun 2020<br>GW-1A |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433 Tested: 9/6/2020** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Toluene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Ethylbenzene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| m/p-xylene | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | - |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Surrogates | | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | **114** | **118** | **113** | - |
| d8-toluene (Surrogate) | % | - | **113** | **117** | **111** | - |
| Bromofluorobenzene (Surrogate) | % | - | **97** | **101** | **97** | - |
| Totals | | | | | | |
| Total Xylenes | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | - |
| Total BTEX | mg/kg | 0.6 | <0.6 | <0.6 | <0.6 | - |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 9/6/2020** | | | | | | |
| TRH C6-C10 | mg/kg | 25 | <25 | <25 | <25 | - |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | <20 | - |
| Surrogates | | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | **114** | **118** | **113** | - |
| d8-toluene (Surrogate) | % | - | **113** | **117** | **111** | - |
| Bromofluorobenzene (Surrogate) | % | - | **97** | **101** | **97** | - |
| VPH F Bands | | | | | | |
| Benzene (F0) | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | <25 | <25 | <25 | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE207183.009<br>Soil<br>04 Jun 2020<br>WC-9 | SE207183.010<br>Soil<br>04 Jun 2020<br>WC-10 | SE207183.011<br>Soil<br>04 Jun 2020<br>WC-11 | SE207183.012<br>Material<br>04 Jun 2020<br>GW-1A |
|---|---|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 9/6/2020** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | <20 | <20 | <20 | - |
| TRH C15-C28 | mg/kg | 45 | <45 | <45 | <45 | - |
| TRH C29-C36 | mg/kg | 45 | <45 | <45 | <45 | - |
| TRH C37-C40 | mg/kg | 100 | <100 | <100 | <100 | - |
| TRH C10-C36 Total | mg/kg | 110 | <110 | <110 | <110 | - |
| TRH >C10-C40 Total (F bands) | mg/kg | 210 | <210 | <210 | <210 | - |
| TRH F Bands | | | | | | |
| TRH >C10-C16 | mg/kg | 25 | <25 | <25 | <25 | - |
| TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | <25 | <25 | <25 | - |
| TRH >C16-C34 (F3) | mg/kg | 90 | <90 | <90 | <90 | - |
| TRH >C34-C40 (F4) | mg/kg | 120 | <120 | <120 | <120 | - |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 9/6/2020** | | | | | | |
| 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 | <0.1 | <0.1 | - |
| Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Dibenzo(ah)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | - |
| Benzo(ghi)perylene | mg/kg | 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 | - |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 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 | - |
| Total PAH (18) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | - |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | <0.8 | <0.8 | <0.8 | - |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | **94** | **92** | **92** | - |
| 2-fluorobiphenyl (Surrogate) | % | - | **89** | **93** | **100** | - |
| d14-p-terphenyl (Surrogate) | % | - | **85** | **114** | **90** | - |
| **Speciated Phenols in Soil Method: AN420 Tested: 9/6/2020** | | | | | | |
| Phenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | - |
| 2-methyl phenol (o-cresol) | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | - |
| 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | <1 | <1 | <1 | - |
| Total Cresol | mg/kg | 1.5 | <1.5 | <1.5 | <1.5 | - |
| 2-chlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | - |
| 2,4-dimethylphenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | - |
| 2,6-dichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | - |
| 2,4-dichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | - |
| 2,4,6-trichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | - |
| 2-nitrophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | - |
| 4-nitrophenol | mg/kg | 1 | <1 | <1 | <1 | - |
| 2,4,5-trichlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | - |
| 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | <1 | <1 | <1 | - |
| Pentachlorophenol | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | - |
| 2,4-dinitrophenol | mg/kg | 2 | <2 | <2 | <2 | - |
| 4-chloro-3-methylphenol | mg/kg | 2 | <2 | <2 | <2 | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.009<br>Soil<br>04 Jun 2020<br>WC-9 | SE207183.010<br>Soil<br>04 Jun 2020<br>WC-10 | SE207183.011<br>Soil<br>04 Jun 2020<br>WC-11 | SE207183.012<br>Material<br>04 Jun 2020<br>GW-1A |
|---|---|---|---|---|---|---|---|
| **Speciated Phenols in Soil Method: AN420 Tested: 15/6/2020 (continued)** | | | | | | | |
| Surrogates | | | | | | | |
| 2,4,6-Tribromophenol (Surrogate) | % | - | | **86** | **85** | **84** | - |
| d5-phenol (Surrogate) | % | - | | **83** | **83** | **84** | - |
| **OC Pesticides in Soil Method: AN420 Tested: 9/6/2020** | | | | | | | |
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Alpha BHC | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Lindane | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Heptachlor | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Aldrin | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Beta BHC | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Delta BHC | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Heptachlor epoxide | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| o,p'-DDE | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Alpha Endosulfan | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | - |
| Gamma Chlordane | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Alpha Chlordane | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| trans-Nonachlor | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| p,p'-DDE | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Dieldrin | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | - |
| Endrin | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | - |
| o,p'-DDD | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| o,p'-DDT | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Beta Endosulfan | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | - |
| p,p'-DDD | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| p,p'-DDT | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Endosulfan sulphate | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Endrin Aldehyde | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Methoxychlor | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Endrin Ketone | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Isodrin | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Mirex | mg/kg | 0.1 | | <0.1 | <0.1 | <0.1 | - |
| Total CLP OC Pesticides | mg/kg | 1 | | <1 | <1 | <1 | - |
| Surrogates | | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | | **108** | **107** | **117** | - |
| **OP Pesticides in Soil Method: AN420 Tested: 9/6/2020** | | | | | | | |
| Dichlorvos | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | - |
| Dimethoate | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | - |
| Diazinon (Dimpylate) | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | - |
| Fenitrothion | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | - |
| Malathion | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | - |
| Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | - |
| Parathion-ethyl (Parathion) | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | - |
| Bromophos Ethyl | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | - |
| Methidathion | mg/kg | 0.5 | | <0.5 | <0.5 | <0.5 | - |
| Ethion | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | - |
| Azinphos-methyl (Guthion) | mg/kg | 0.2 | | <0.2 | <0.2 | <0.2 | - |
| Total OP Pesticides* | mg/kg | 1.7 | | <1.7 | <1.7 | <1.7 | - |
| Surrogates | | | | | | | |
| 2-fluorobiphenyl (Surrogate) | % | - | | **89** | **93** | **100** | - |
| d14-p-terphenyl (Surrogate) | % | - | | **85** | **114** | **90** | - |

| Parameter | Units | LOR | Sample Number: SE207183.009<br>Sample Matrix: Soil<br>Sample Date: 04 Jun 2020<br>Sample Name: WC-9 | SE207183.010<br>Soil<br>04 Jun 2020<br>WC-10 | SE207183.011<br>Soil<br>04 Jun 2020<br>WC-11 | SE207183.012<br>Material<br>04 Jun 2020<br>GW-1A |
|---|---|---|---|---|---|---|
| **PCBs in Soil Method: AN420 Tested: 9/6/2020** | | | | | | |
| Arochlor 1016 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | - |
| Arochlor 1221 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | - |
| Arochlor 1232 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | - |
| Arochlor 1242 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | - |
| Arochlor 1248 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | - |
| Arochlor 1254 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | - |
| Arochlor 1260 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | - |
| Arochlor 1262 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | - |
| Arochlor 1268 | mg/kg | 0.2 | <0.2 | <0.2 | <0.2 | - |
| Total PCBs (Arochlors) | mg/kg | 1 | <1 | <1 | <1 | - |
| Surrogates | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | **108** | **107** | **117** | - |
| **Total Cyanide in soil by Discrete Analyser (Aquakem) Method: AN077/AN287 Tested: 15/6/2020** | | | | | | |
| Total Cyanide | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | - |
| Cyanide Amenable to Chlorination* | mg/kg | 0.5 | <0.5 | <0.5 | <0.5 | - |
| **Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 9/6/2020** | | | | | | |
| Arsenic, As | mg/kg | 1 | **7** | **2** | **2** | - |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | - |
| Chromium, Cr | mg/kg | 0.5 | **22** | **11** | **30** | - |
| Copper, Cu | mg/kg | 0.5 | **56** | **28** | **70** | - |
| Nickel, Ni | mg/kg | 0.5 | **9.2** | **4.7** | **5.2** | - |
| Lead, Pb | mg/kg | 1 | **59** | **58** | **81** | - |
| Zinc, Zn | mg/kg | 2 | **2200** | **980** | **1300** | - |
| **Mercury in Soil Method: AN312 Tested: 9/6/2020** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | - |
| **Moisture Content Method: AN002 Tested: 9/6/2020** | | | | | | |
| % Moisture | %w/w | 1 | **5.4** | **5.7** | **6.3** | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE207183.009<br>Soil<br>04 Jun 2020<br>WC-9 | SE207183.010<br>Soil<br>04 Jun 2020<br>WC-10 | SE207183.011<br>Soil<br>04 Jun 2020<br>WC-11 | SE207183.012<br>Material<br>04 Jun 2020<br>GW-1A |
|---|---|---|---|---|---|---|
| **Fibre Identification in soil Method: AN602 Tested: 15/6/2020** | | | | | | |
| FibreID | | | | | | |
| Asbestos Detected | No unit | - | - | - | - | - |
| SemiQuant | | | | | | |
| Estimated Fibres* | %w/w | 0.01 | - | - | - | - |
| **Fibre ID in bulk materials Method: AN602 Tested: 15/6/2020** | | | | | | |
| FibreID | | | | | | |
| Asbestos Detected | No unit | - | - | - | - | Yes |

| Parameter | Units | LOR | Sample Number: SE207183.013<br>Sample Matrix: Soil<br>Sample Date: 04 Jun 2020<br>Sample Name: WC-1A | SE207183.014<br>Soil<br>04 Jun 2020<br>WC-2A | SE207183.015<br>Soil<br>04 Jun 2020<br>WC-3A | SE207183.016<br>Soil<br>04 Jun 2020<br>WC-4A |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433 Tested: 15/6/2020** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | - | - | - | - |
| Toluene | mg/kg | 0.1 | - | - | - | - |
| Ethylbenzene | mg/kg | 0.1 | - | - | - | - |
| m/p-xylene | mg/kg | 0.2 | - | - | - | - |
| o-xylene | mg/kg | 0.1 | - | - | - | - |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | - | - | - | - |
| Surrogates | | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - | - | - |
| d8-toluene (Surrogate) | % | - | - | - | - | - |
| Bromofluorobenzene (Surrogate) | % | - | - | - | - | - |
| Totals | | | | | | |
| Total Xylenes | mg/kg | 0.3 | - | - | - | - |
| Total BTEX | mg/kg | 0.6 | - | - | - | - |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 15/6/2020** | | | | | | |
| TRH C6-C10 | mg/kg | 25 | - | - | - | - |
| TRH C6-C9 | mg/kg | 20 | - | - | - | - |
| Surrogates | | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - | - | - |
| d8-toluene (Surrogate) | % | - | - | - | - | - |
| Bromofluorobenzene (Surrogate) | % | - | - | - | - | - |
| VPH F Bands | | | | | | |
| Benzene (F0) | mg/kg | 0.1 | - | - | - | - |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.013<br>Soil<br>04 Jun 2020<br>WC-1A | SE207183.014<br>Soil<br>04 Jun 2020<br>WC-2A | SE207183.015<br>Soil<br>04 Jun 2020<br>WC-3A | SE207183.016<br>Soil<br>04 Jun 2020<br>WC-4A |
|---|---|---|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 12/6/2020** | | | | | | | |
| TRH C10-C14 | mg/kg | 20 | | - | - | - | - |
| TRH C15-C28 | mg/kg | 45 | | - | - | - | - |
| TRH C29-C36 | mg/kg | 45 | | - | - | - | - |
| TRH C37-C40 | mg/kg | 100 | | - | - | - | - |
| TRH C10-C36 Total | mg/kg | 110 | | - | - | - | - |
| TRH >C10-C40 Total (F bands) | mg/kg | 210 | | - | - | - | - |
| TRH F Bands | | | | | | | |
| TRH >C10-C16 | mg/kg | 25 | | - | - | - | - |
| TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | | - | - | - | - |
| TRH >C16-C34 (F3) | mg/kg | 90 | | - | - | - | - |
| TRH >C34-C40 (F4) | mg/kg | 120 | | - | - | - | - |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 12/6/2020** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | - | - | - | - |
| 2-methylnaphthalene | mg/kg | 0.1 | | - | - | - | - |
| 1-methylnaphthalene | mg/kg | 0.1 | | - | - | - | - |
| Acenaphthylene | mg/kg | 0.1 | | - | - | - | - |
| Acenaphthene | mg/kg | 0.1 | | - | - | - | - |
| Fluorene | mg/kg | 0.1 | | - | - | - | - |
| Phenanthrene | mg/kg | 0.1 | | - | - | - | - |
| Anthracene | mg/kg | 0.1 | | - | - | - | - |
| Fluoranthene | mg/kg | 0.1 | | - | - | - | - |
| Pyrene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(a)anthracene | mg/kg | 0.1 | | - | - | - | - |
| Chrysene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(a)pyrene | mg/kg | 0.1 | | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | | - | - | - | - |
| Dibenzo(ah)anthracene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(ghi)perylene | mg/kg | 0.1 | | - | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=0 | TEQ (mg/kg) | 0.2 | | - | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 0.3 | | - | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | TEQ (mg/kg) | 0.2 | | - | - | - | - |
| Total PAH (18) | mg/kg | 0.8 | | - | - | - | - |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | | - | - | - | - |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | - | - | - | - |
| 2-fluorobiphenyl (Surrogate) | % | - | | - | - | - | - |
| d14-p-terphenyl (Surrogate) | % | - | | - | - | - | - |
| **Speciated Phenols in Soil Method: AN420 Tested: 15/6/2020** | | | | | | | |
| Phenol | mg/kg | 0.5 | | - | - | - | - |
| 2-methyl phenol (o-cresol) | mg/kg | 0.5 | | - | - | - | - |
| 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | | - | - | - | - |
| Total Cresol | mg/kg | 1.5 | | - | - | - | - |
| 2-chlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4-dimethylphenol | mg/kg | 0.5 | | - | - | - | - |
| 2,6-dichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4-dichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4,6-trichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2-nitrophenol | mg/kg | 0.5 | | - | - | - | - |
| 4-nitrophenol | mg/kg | 1 | | - | - | - | - |
| 2,4,5-trichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | | - | - | - | - |
| Pentachlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4-dinitrophenol | mg/kg | 2 | | - | - | - | - |
| 4-chloro-3-methylphenol | mg/kg | 2 | | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.013<br>Soil<br>04 Jun 2020<br>WC-1A | SE207183.014<br>Soil<br>04 Jun 2020<br>WC-2A | SE207183.015<br>Soil<br>04 Jun 2020<br>WC-3A | SE207183.016<br>Soil<br>04 Jun 2020<br>WC-4A |
|---|---|---|---|---|---|---|---|
| **Speciated Phenols in Soil Method: AN420 Tested: 15/6/2020 (continued)** | | | | | | | |
| Surrogates | | | | | | | |
| 2,4,6-Tribromophenol (Surrogate) | % | - | | - | - | - | - |
| d5-phenol (Surrogate) | % | - | | - | - | - | - |
| **OC Pesticides in Soil Method: AN420 Tested: 15/6/2020** | | | | | | | |
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | | - | - | - | - |
| Alpha BHC | mg/kg | 0.1 | | - | - | - | - |
| Lindane | mg/kg | 0.1 | | - | - | - | - |
| Heptachlor | mg/kg | 0.1 | | - | - | - | - |
| Aldrin | mg/kg | 0.1 | | - | - | - | - |
| Beta BHC | mg/kg | 0.1 | | - | - | - | - |
| Delta BHC | mg/kg | 0.1 | | - | - | - | - |
| Heptachlor epoxide | mg/kg | 0.1 | | - | - | - | - |
| o,p'-DDE | mg/kg | 0.1 | | - | - | - | - |
| Alpha Endosulfan | mg/kg | 0.2 | | - | - | - | - |
| Gamma Chlordane | mg/kg | 0.1 | | - | - | - | - |
| Alpha Chlordane | mg/kg | 0.1 | | - | - | - | - |
| trans-Nonachlor | mg/kg | 0.1 | | - | - | - | - |
| p,p'-DDE | mg/kg | 0.1 | | - | - | - | - |
| Dieldrin | mg/kg | 0.2 | | - | - | - | - |
| Endrin | mg/kg | 0.2 | | - | - | - | - |
| o,p'-DDD | mg/kg | 0.1 | | - | - | - | - |
| o,p'-DDT | mg/kg | 0.1 | | - | - | - | - |
| Beta Endosulfan | mg/kg | 0.2 | | - | - | - | - |
| p,p'-DDD | mg/kg | 0.1 | | - | - | - | - |
| p,p'-DDT | mg/kg | 0.1 | | - | - | - | - |
| Endosulfan sulphate | mg/kg | 0.1 | | - | - | - | - |
| Endrin Aldehyde | mg/kg | 0.1 | | - | - | - | - |
| Methoxychlor | mg/kg | 0.1 | | - | - | - | - |
| Endrin Ketone | mg/kg | 0.1 | | - | - | - | - |
| Isodrin | mg/kg | 0.1 | | - | - | - | - |
| Mirex | mg/kg | 0.1 | | - | - | - | - |
| Total CLP OC Pesticides | mg/kg | 1 | | - | - | - | - |
| Surrogates | | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | | - | - | - | - |
| **OP Pesticides in Soil Method: AN420 Tested: 12/6/2020** | | | | | | | |
| Dichlorvos | mg/kg | 0.5 | | - | - | - | - |
| Dimethoate | mg/kg | 0.5 | | - | - | - | - |
| Diazinon (Dimpylate) | mg/kg | 0.5 | | - | - | - | - |
| Fenitrothion | mg/kg | 0.2 | | - | - | - | - |
| Malathion | mg/kg | 0.2 | | - | - | - | - |
| Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 0.2 | | - | - | - | - |
| Parathion-ethyl (Parathion) | mg/kg | 0.2 | | - | - | - | - |
| Bromophos Ethyl | mg/kg | 0.2 | | - | - | - | - |
| Methidathion | mg/kg | 0.5 | | - | - | - | - |
| Ethion | mg/kg | 0.2 | | - | - | - | - |
| Azinphos-methyl (Guthion) | mg/kg | 0.2 | | - | - | - | - |
| Total OP Pesticides* | mg/kg | 1.7 | | - | - | - | - |
| Surrogates | | | | | | | |
| 2-fluorobiphenyl (Surrogate) | % | - | | - | - | - | - |
| d14-p-terphenyl (Surrogate) | % | - | | - | - | - | - |

| Parameter | Units | LOR | Sample Number: SE207183.013<br>Sample Matrix: Soil<br>Sample Date: 04 Jun 2020<br>Sample Name: WC-1A | SE207183.014<br>Soil<br>04 Jun 2020<br>WC-2A | SE207183.015<br>Soil<br>04 Jun 2020<br>WC-3A | SE207183.016<br>Soil<br>04 Jun 2020<br>WC-4A |
|---|---|---|---|---|---|---|
| **PCBs in Soil Method: AN420 Tested: 15/6/2020** | | | | | | |
| Arochlor 1016 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1221 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1232 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1242 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1248 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1254 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1260 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1262 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1268 | mg/kg | 0.2 | - | - | - | - |
| Total PCBs (Arochlors) | mg/kg | 1 | - | - | - | - |
| Surrogates | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | - | - | - | - |
| **Total Cyanide in soil by Discrete Analyser (Aquakem) Method: AN077/AN287 Tested: 15/6/2020** | | | | | | |
| Total Cyanide | mg/kg | 0.5 | - | - | - | - |
| Cyanide Amenable to Chlorination* | mg/kg | 0.5 | - | - | - | - |
| **Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 12/6/2020** | | | | | | |
| Arsenic, As | mg/kg | 1 | - | - | - | - |
| Cadmium, Cd | mg/kg | 0.3 | - | - | - | - |
| Chromium, Cr | mg/kg | 0.5 | - | - | - | - |
| Copper, Cu | mg/kg | 0.5 | - | - | - | - |
| Nickel, Ni | mg/kg | 0.5 | - | - | - | - |
| Lead, Pb | mg/kg | 1 | - | - | - | - |
| Zinc, Zn | mg/kg | 2 | - | - | - | - |
| **Mercury in Soil Method: AN312 Tested: 12/6/2020** | | | | | | |
| Mercury | mg/kg | 0.05 | - | - | - | - |
| **Moisture Content Method: AN002 Tested: 11/6/2020** | | | | | | |
| % Moisture | %w/w | 1 | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE207183.013<br>Soil<br>04 Jun 2020<br>WC-1A | SE207183.014<br>Soil<br>04 Jun 2020<br>WC-2A | SE207183.015<br>Soil<br>04 Jun 2020<br>WC-3A | SE207183.016<br>Soil<br>04 Jun 2020<br>WC-4A |
|---|---|---|---|---|---|---|
| **Fibre Identification in soil Method: AN602 Tested: 12/6/2020** | | | | | | |
| FibreID | | | | | | |
| Asbestos Detected | No unit | - | No | No | No | No |
| SemiQuant | | | | | | |
| Estimated Fibres* | %w/w | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| **Fibre ID in bulk materials Method: AN602 Tested: 15/6/2020** | | | | | | |
| FibreID | | | | | | |
| Asbestos Detected | No unit | - | - | - | - | - |

| Parameter | Units | LOR | Sample Number: SE207183.017<br>Sample Matrix: Soil<br>Sample Date: 04 Jun 2020<br>Sample Name: WC-5A | SE207183.018<br>Soil<br>04 Jun 2020<br>WC-6A | SE207183.019<br>Soil<br>04 Jun 2020<br>WC-7A | SE207183.020<br>Soil<br>04 Jun 2020<br>WC-8A |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433 Tested: 15/6/2020** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | - | - | - | - |
| Toluene | mg/kg | 0.1 | - | - | - | - |
| Ethylbenzene | mg/kg | 0.1 | - | - | - | - |
| m/p-xylene | mg/kg | 0.2 | - | - | - | - |
| o-xylene | mg/kg | 0.1 | - | - | - | - |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | - | - | - | - |
| Surrogates | | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - | - | - |
| d8-toluene (Surrogate) | % | - | - | - | - | - |
| Bromofluorobenzene (Surrogate) | % | - | - | - | - | - |
| Totals | | | | | | |
| Total Xylenes | mg/kg | 0.3 | - | - | - | - |
| Total BTEX | mg/kg | 0.6 | - | - | - | - |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 15/6/2020** | | | | | | |
| TRH C6-C10 | mg/kg | 25 | - | - | - | - |
| TRH C6-C9 | mg/kg | 20 | - | - | - | - |
| Surrogates | | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - | - | - |
| d8-toluene (Surrogate) | % | - | - | - | - | - |
| Bromofluorobenzene (Surrogate) | % | - | - | - | - | - |
| VPH F Bands | | | | | | |
| Benzene (F0) | mg/kg | 0.1 | - | - | - | - |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.017<br>Soil<br>04 Jun 2020<br>WC-5A | SE207183.018<br>Soil<br>04 Jun 2020<br>WC-6A | SE207183.019<br>Soil<br>04 Jun 2020<br>WC-7A | SE207183.020<br>Soil<br>04 Jun 2020<br>WC-8A |
|---|---|---|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 12/6/2020** | | | | | | | |
| TRH C10-C14 | mg/kg | 20 | | - | - | - | - |
| TRH C15-C28 | mg/kg | 45 | | - | - | - | - |
| TRH C29-C36 | mg/kg | 45 | | - | - | - | - |
| TRH C37-C40 | mg/kg | 100 | | - | - | - | - |
| TRH C10-C36 Total | mg/kg | 110 | | - | - | - | - |
| TRH >C10-C40 Total (F bands) | mg/kg | 210 | | - | - | - | - |
| TRH F Bands | | | | | | | |
| TRH >C10-C16 | mg/kg | 25 | | - | - | - | - |
| TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | | - | - | - | - |
| TRH >C16-C34 (F3) | mg/kg | 90 | | - | - | - | - |
| TRH >C34-C40 (F4) | mg/kg | 120 | | - | - | - | - |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 12/6/2020** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | - | - | - | - |
| 2-methylnaphthalene | mg/kg | 0.1 | | - | - | - | - |
| 1-methylnaphthalene | mg/kg | 0.1 | | - | - | - | - |
| Acenaphthylene | mg/kg | 0.1 | | - | - | - | - |
| Acenaphthene | mg/kg | 0.1 | | - | - | - | - |
| Fluorene | mg/kg | 0.1 | | - | - | - | - |
| Phenanthrene | mg/kg | 0.1 | | - | - | - | - |
| Anthracene | mg/kg | 0.1 | | - | - | - | - |
| Fluoranthene | mg/kg | 0.1 | | - | - | - | - |
| Pyrene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(a)anthracene | mg/kg | 0.1 | | - | - | - | - |
| Chrysene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(a)pyrene | mg/kg | 0.1 | | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | | - | - | - | - |
| Dibenzo(ah)anthracene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(ghi)perylene | mg/kg | 0.1 | | - | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=0 | TEQ (mg/kg) | 0.2 | | - | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 0.3 | | - | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | TEQ (mg/kg) | 0.2 | | - | - | - | - |
| Total PAH (18) | mg/kg | 0.8 | | - | - | - | - |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | | - | - | - | - |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | - | - | - | - |
| 2-fluorobiphenyl (Surrogate) | % | - | | - | - | - | - |
| d14-p-terphenyl (Surrogate) | % | - | | - | - | - | - |
| **Speciated Phenols in Soil Method: AN420 Tested: 15/6/2020** | | | | | | | |
| Phenol | mg/kg | 0.5 | | - | - | - | - |
| 2-methyl phenol (o-cresol) | mg/kg | 0.5 | | - | - | - | - |
| 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | | - | - | - | - |
| Total Cresol | mg/kg | 1.5 | | - | - | - | - |
| 2-chlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4-dimethylphenol | mg/kg | 0.5 | | - | - | - | - |
| 2,6-dichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4-dichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4,6-trichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2-nitrophenol | mg/kg | 0.5 | | - | - | - | - |
| 4-nitrophenol | mg/kg | 1 | | - | - | - | - |
| 2,4,5-trichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | | - | - | - | - |
| Pentachlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4-dinitrophenol | mg/kg | 2 | | - | - | - | - |
| 4-chloro-3-methylphenol | mg/kg | 2 | | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.017<br>Soil<br>04 Jun 2020<br>WC-5A | SE207183.018<br>Soil<br>04 Jun 2020<br>WC-6A | SE207183.019<br>Soil<br>04 Jun 2020<br>WC-7A | SE207183.020<br>Soil<br>04 Jun 2020<br>WC-8A |
|---|---|---|---|---|---|---|---|
| **Speciated Phenols in Soil Method: AN420 Tested: 15/6/2020 (continued)** | | | | | | | |
| Surrogates | | | | | | | |
| 2,4,6-Tribromophenol (Surrogate) | % | - | | - | - | - | - |
| d5-phenol (Surrogate) | % | - | | - | - | - | - |
| **OC Pesticides in Soil Method: AN420 Tested: 15/6/2020** | | | | | | | |
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | | - | - | - | - |
| Alpha BHC | mg/kg | 0.1 | | - | - | - | - |
| Lindane | mg/kg | 0.1 | | - | - | - | - |
| Heptachlor | mg/kg | 0.1 | | - | - | - | - |
| Aldrin | mg/kg | 0.1 | | - | - | - | - |
| Beta BHC | mg/kg | 0.1 | | - | - | - | - |
| Delta BHC | mg/kg | 0.1 | | - | - | - | - |
| Heptachlor epoxide | mg/kg | 0.1 | | - | - | - | - |
| o,p'-DDE | mg/kg | 0.1 | | - | - | - | - |
| Alpha Endosulfan | mg/kg | 0.2 | | - | - | - | - |
| Gamma Chlordane | mg/kg | 0.1 | | - | - | - | - |
| Alpha Chlordane | mg/kg | 0.1 | | - | - | - | - |
| trans-Nonachlor | mg/kg | 0.1 | | - | - | - | - |
| p,p'-DDE | mg/kg | 0.1 | | - | - | - | - |
| Dieldrin | mg/kg | 0.2 | | - | - | - | - |
| Endrin | mg/kg | 0.2 | | - | - | - | - |
| o,p'-DDD | mg/kg | 0.1 | | - | - | - | - |
| o,p'-DDT | mg/kg | 0.1 | | - | - | - | - |
| Beta Endosulfan | mg/kg | 0.2 | | - | - | - | - |
| p,p'-DDD | mg/kg | 0.1 | | - | - | - | - |
| p,p'-DDT | mg/kg | 0.1 | | - | - | - | - |
| Endosulfan sulphate | mg/kg | 0.1 | | - | - | - | - |
| Endrin Aldehyde | mg/kg | 0.1 | | - | - | - | - |
| Methoxychlor | mg/kg | 0.1 | | - | - | - | - |
| Endrin Ketone | mg/kg | 0.1 | | - | - | - | - |
| Isodrin | mg/kg | 0.1 | | - | - | - | - |
| Mirex | mg/kg | 0.1 | | - | - | - | - |
| Total CLP OC Pesticides | mg/kg | 1 | | - | - | - | - |
| Surrogates | | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | | - | - | - | - |
| **OP Pesticides in Soil Method: AN420 Tested: 12/6/2020** | | | | | | | |
| Dichlorvos | mg/kg | 0.5 | | - | - | - | - |
| Dimethoate | mg/kg | 0.5 | | - | - | - | - |
| Diazinon (Dimpylate) | mg/kg | 0.5 | | - | - | - | - |
| Fenitrothion | mg/kg | 0.2 | | - | - | - | - |
| Malathion | mg/kg | 0.2 | | - | - | - | - |
| Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 0.2 | | - | - | - | - |
| Parathion-ethyl (Parathion) | mg/kg | 0.2 | | - | - | - | - |
| Bromophos Ethyl | mg/kg | 0.2 | | - | - | - | - |
| Methidathion | mg/kg | 0.5 | | - | - | - | - |
| Ethion | mg/kg | 0.2 | | - | - | - | - |
| Azinphos-methyl (Guthion) | mg/kg | 0.2 | | - | - | - | - |
| Total OP Pesticides* | mg/kg | 1.7 | | - | - | - | - |
| Surrogates | | | | | | | |
| 2-fluorobiphenyl (Surrogate) | % | - | | - | - | - | - |
| d14-p-terphenyl (Surrogate) | % | - | | - | - | - | - |

| Parameter | Units | LOR | Sample Number: SE207183.017<br>Sample Matrix: Soil<br>Sample Date: 04 Jun 2020<br>Sample Name: WC-5A | SE207183.018<br>Soil<br>04 Jun 2020<br>WC-6A | SE207183.019<br>Soil<br>04 Jun 2020<br>WC-7A | SE207183.020<br>Soil<br>04 Jun 2020<br>WC-8A |
|---|---|---|---|---|---|---|
| **PCBs in Soil Method: AN420 Tested: 15/6/2020** | | | | | | |
| Arochlor 1016 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1221 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1232 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1242 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1248 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1254 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1260 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1262 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1268 | mg/kg | 0.2 | - | - | - | - |
| Total PCBs (Arochlors) | mg/kg | 1 | - | - | - | - |
| Surrogates | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | - | - | - | - |
| **Total Cyanide in soil by Discrete Analyser (Aquakem) Method: AN077/AN287 Tested: 15/6/2020** | | | | | | |
| Total Cyanide | mg/kg | 0.5 | - | - | - | - |
| Cyanide Amenable to Chlorination* | mg/kg | 0.5 | - | - | - | - |
| **Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 12/6/2020** | | | | | | |
| Arsenic, As | mg/kg | 1 | - | - | - | - |
| Cadmium, Cd | mg/kg | 0.3 | - | - | - | - |
| Chromium, Cr | mg/kg | 0.5 | - | - | - | - |
| Copper, Cu | mg/kg | 0.5 | - | - | - | - |
| Nickel, Ni | mg/kg | 0.5 | - | - | - | - |
| Lead, Pb | mg/kg | 1 | - | - | - | - |
| Zinc, Zn | mg/kg | 2 | - | - | - | - |
| **Mercury in Soil Method: AN312 Tested: 12/6/2020** | | | | | | |
| Mercury | mg/kg | 0.05 | - | - | - | - |
| **Moisture Content Method: AN002 Tested: 11/6/2020** | | | | | | |
| % Moisture | %w/w | 1 | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE207183.017<br>Soil<br>04 Jun 2020<br>WC-5A | SE207183.018<br>Soil<br>04 Jun 2020<br>WC-6A | SE207183.019<br>Soil<br>04 Jun 2020<br>WC-7A | SE207183.020<br>Soil<br>04 Jun 2020<br>WC-8A |
|---|---|---|---|---|---|---|
| **Fibre Identification in soil Method: AN602 Tested: 12/6/2020** | | | | | | |
| FibreID | | | | | | |
| Asbestos Detected | No unit | - | No | No | No | No |
| SemiQuant | | | | | | |
| Estimated Fibres* | %w/w | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| **Fibre ID in bulk materials Method: AN602 Tested: 15/6/2020** | | | | | | |
| FibreID | | | | | | |
| Asbestos Detected | No unit | - | - | - | - | - |

| Parameter | Units | LOR | Sample Number: SE207183.021<br>Sample Matrix: Soil<br>Sample Date: 04 Jun 2020<br>Sample Name: WC-9A | SE207183.022<br>Soil<br>04 Jun 2020<br>WC-10A | SE207183.023<br>Soil<br>04 Jun 2020<br>WC-11A | SE207183.024<br>Soil<br>04 Jun 2020<br>TP-24 |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433 Tested: 15/6/2020** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | - | - | - | - |
| Toluene | mg/kg | 0.1 | - | - | - | - |
| Ethylbenzene | mg/kg | 0.1 | - | - | - | - |
| m/p-xylene | mg/kg | 0.2 | - | - | - | - |
| o-xylene | mg/kg | 0.1 | - | - | - | - |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | - | - | - | - |
| Surrogates | | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - | - | - |
| d8-toluene (Surrogate) | % | - | - | - | - | - |
| Bromofluorobenzene (Surrogate) | % | - | - | - | - | - |
| Totals | | | | | | |
| Total Xylenes | mg/kg | 0.3 | - | - | - | - |
| Total BTEX | mg/kg | 0.6 | - | - | - | - |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 15/6/2020** | | | | | | |
| TRH C6-C10 | mg/kg | 25 | - | - | - | - |
| TRH C6-C9 | mg/kg | 20 | - | - | - | - |
| Surrogates | | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - | - | - |
| d8-toluene (Surrogate) | % | - | - | - | - | - |
| Bromofluorobenzene (Surrogate) | % | - | - | - | - | - |
| VPH F Bands | | | | | | |
| Benzene (F0) | mg/kg | 0.1 | - | - | - | - |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.021<br>Soil<br>04 Jun 2020<br>WC-9A | SE207183.022<br>Soil<br>04 Jun 2020<br>WC-10A | SE207183.023<br>Soil<br>04 Jun 2020<br>WC-11A | SE207183.024<br>Soil<br>04 Jun 2020<br>TP-24 |
|---|---|---|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 12/6/2020** | | | | | | | |
| TRH C10-C14 | mg/kg | 20 | | - | - | - | - |
| TRH C15-C28 | mg/kg | 45 | | - | - | - | - |
| TRH C29-C36 | mg/kg | 45 | | - | - | - | - |
| TRH C37-C40 | mg/kg | 100 | | - | - | - | - |
| TRH C10-C36 Total | mg/kg | 110 | | - | - | - | - |
| TRH >C10-C40 Total (F bands) | mg/kg | 210 | | - | - | - | - |
| TRH F Bands | | | | | | | |
| TRH >C10-C16 | mg/kg | 25 | | - | - | - | - |
| TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | | - | - | - | - |
| TRH >C16-C34 (F3) | mg/kg | 90 | | - | - | - | - |
| TRH >C34-C40 (F4) | mg/kg | 120 | | - | - | - | - |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 12/6/2020** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | - | - | - | - |
| 2-methylnaphthalene | mg/kg | 0.1 | | - | - | - | - |
| 1-methylnaphthalene | mg/kg | 0.1 | | - | - | - | - |
| Acenaphthylene | mg/kg | 0.1 | | - | - | - | - |
| Acenaphthene | mg/kg | 0.1 | | - | - | - | - |
| Fluorene | mg/kg | 0.1 | | - | - | - | - |
| Phenanthrene | mg/kg | 0.1 | | - | - | - | - |
| Anthracene | mg/kg | 0.1 | | - | - | - | - |
| Fluoranthene | mg/kg | 0.1 | | - | - | - | - |
| Pyrene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(a)anthracene | mg/kg | 0.1 | | - | - | - | - |
| Chrysene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(a)pyrene | mg/kg | 0.1 | | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | | - | - | - | - |
| Dibenzo(ah)anthracene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(ghi)perylene | mg/kg | 0.1 | | - | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=0 | TEQ (mg/kg) | 0.2 | | - | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 0.3 | | - | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | TEQ (mg/kg) | 0.2 | | - | - | - | - |
| Total PAH (18) | mg/kg | 0.8 | | - | - | - | - |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | | - | - | - | - |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | - | - | - | - |
| 2-fluorobiphenyl (Surrogate) | % | - | | - | - | - | - |
| d14-p-terphenyl (Surrogate) | % | - | | - | - | - | - |
| **Speciated Phenols in Soil Method: AN420 Tested: 15/6/2020** | | | | | | | |
| Phenol | mg/kg | 0.5 | | - | - | - | - |
| 2-methyl phenol (o-cresol) | mg/kg | 0.5 | | - | - | - | - |
| 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | | - | - | - | - |
| Total Cresol | mg/kg | 1.5 | | - | - | - | - |
| 2-chlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4-dimethylphenol | mg/kg | 0.5 | | - | - | - | - |
| 2,6-dichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4-dichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4,6-trichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2-nitrophenol | mg/kg | 0.5 | | - | - | - | - |
| 4-nitrophenol | mg/kg | 1 | | - | - | - | - |
| 2,4,5-trichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | | - | - | - | - |
| Pentachlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4-dinitrophenol | mg/kg | 2 | | - | - | - | - |
| 4-chloro-3-methylphenol | mg/kg | 2 | | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.021<br>Soil<br>04 Jun 2020<br>WC-9A | SE207183.022<br>Soil<br>04 Jun 2020<br>WC-10A | SE207183.023<br>Soil<br>04 Jun 2020<br>WC-11A | SE207183.024<br>Soil<br>04 Jun 2020<br>TP-24 |
|---|---|---|---|---|---|---|---|
| **Speciated Phenols in Soil Method: AN420 Tested: 15/6/2020 (continued)** | | | | | | | |
| Surrogates | | | | | | | |
| 2,4,6-Tribromophenol (Surrogate) | % | - | | - | - | - | - |
| d5-phenol (Surrogate) | % | - | | - | - | - | - |
| **OC Pesticides in Soil Method: AN420 Tested: 15/6/2020** | | | | | | | |
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | | - | - | - | - |
| Alpha BHC | mg/kg | 0.1 | | - | - | - | - |
| Lindane | mg/kg | 0.1 | | - | - | - | - |
| Heptachlor | mg/kg | 0.1 | | - | - | - | - |
| Aldrin | mg/kg | 0.1 | | - | - | - | - |
| Beta BHC | mg/kg | 0.1 | | - | - | - | - |
| Delta BHC | mg/kg | 0.1 | | - | - | - | - |
| Heptachlor epoxide | mg/kg | 0.1 | | - | - | - | - |
| o,p'-DDE | mg/kg | 0.1 | | - | - | - | - |
| Alpha Endosulfan | mg/kg | 0.2 | | - | - | - | - |
| Gamma Chlordane | mg/kg | 0.1 | | - | - | - | - |
| Alpha Chlordane | mg/kg | 0.1 | | - | - | - | - |
| trans-Nonachlor | mg/kg | 0.1 | | - | - | - | - |
| p,p'-DDE | mg/kg | 0.1 | | - | - | - | - |
| Dieldrin | mg/kg | 0.2 | | - | - | - | - |
| Endrin | mg/kg | 0.2 | | - | - | - | - |
| o,p'-DDD | mg/kg | 0.1 | | - | - | - | - |
| o,p'-DDT | mg/kg | 0.1 | | - | - | - | - |
| Beta Endosulfan | mg/kg | 0.2 | | - | - | - | - |
| p,p'-DDD | mg/kg | 0.1 | | - | - | - | - |
| p,p'-DDT | mg/kg | 0.1 | | - | - | - | - |
| Endosulfan sulphate | mg/kg | 0.1 | | - | - | - | - |
| Endrin Aldehyde | mg/kg | 0.1 | | - | - | - | - |
| Methoxychlor | mg/kg | 0.1 | | - | - | - | - |
| Endrin Ketone | mg/kg | 0.1 | | - | - | - | - |
| Isodrin | mg/kg | 0.1 | | - | - | - | - |
| Mirex | mg/kg | 0.1 | | - | - | - | - |
| Total CLP OC Pesticides | mg/kg | 1 | | - | - | - | - |
| Surrogates | | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | | - | - | - | - |
| **OP Pesticides in Soil Method: AN420 Tested: 12/6/2020** | | | | | | | |
| Dichlorvos | mg/kg | 0.5 | | - | - | - | - |
| Dimethoate | mg/kg | 0.5 | | - | - | - | - |
| Diazinon (Dimpylate) | mg/kg | 0.5 | | - | - | - | - |
| Fenitrothion | mg/kg | 0.2 | | - | - | - | - |
| Malathion | mg/kg | 0.2 | | - | - | - | - |
| Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 0.2 | | - | - | - | - |
| Parathion-ethyl (Parathion) | mg/kg | 0.2 | | - | - | - | - |
| Bromophos Ethyl | mg/kg | 0.2 | | - | - | - | - |
| Methidathion | mg/kg | 0.5 | | - | - | - | - |
| Ethion | mg/kg | 0.2 | | - | - | - | - |
| Azinphos-methyl (Guthion) | mg/kg | 0.2 | | - | - | - | - |
| Total OP Pesticides* | mg/kg | 1.7 | | - | - | - | - |
| Surrogates | | | | | | | |
| 2-fluorobiphenyl (Surrogate) | % | - | | - | - | - | - |
| d14-p-terphenyl (Surrogate) | % | - | | - | - | - | - |

| Parameter | Units | LOR | Sample Number: SE207183.021<br>Sample Matrix: Soil<br>Sample Date: 04 Jun 2020<br>Sample Name: WC-9A | SE207183.022<br>Soil<br>04 Jun 2020<br>WC-10A | SE207183.023<br>Soil<br>04 Jun 2020<br>WC-11A | SE207183.024<br>Soil<br>04 Jun 2020<br>TP-24 |
|---|---|---|---|---|---|---|
| **PCBs in Soil Method: AN420 Tested: 15/6/2020** | | | | | | |
| Arochlor 1016 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1221 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1232 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1242 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1248 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1254 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1260 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1262 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1268 | mg/kg | 0.2 | - | - | - | - |
| Total PCBs (Arochlors) | mg/kg | 1 | - | - | - | - |
| Surrogates | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | - | - | - | - |
| **Total Cyanide in soil by Discrete Analyser (Aquakem) Method: AN077/AN287 Tested: 15/6/2020** | | | | | | |
| Total Cyanide | mg/kg | 0.5 | - | - | - | - |
| Cyanide Amenable to Chlorination* | mg/kg | 0.5 | - | - | - | - |
| **Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 12/6/2020** | | | | | | |
| Arsenic, As | mg/kg | 1 | - | - | - | **42** |
| Cadmium, Cd | mg/kg | 0.3 | - | - | - | **1.1** |
| Chromium, Cr | mg/kg | 0.5 | - | - | - | **25** |
| Copper, Cu | mg/kg | 0.5 | - | - | - | **490** |
| Nickel, Ni | mg/kg | 0.5 | - | - | - | **7.6** |
| Lead, Pb | mg/kg | 1 | - | - | - | **760** |
| Zinc, Zn | mg/kg | 2 | - | - | - | **12000** |
| **Mercury in Soil Method: AN312 Tested: 12/6/2020** | | | | | | |
| Mercury | mg/kg | 0.05 | - | - | - | <0.05 |
| **Moisture Content Method: AN002 Tested: 11/6/2020** | | | | | | |
| % Moisture | %w/w | 1 | - | - | - | **11.4** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE207183.021<br>Soil<br>04 Jun 2020<br>WC-9A | SE207183.022<br>Soil<br>04 Jun 2020<br>WC-10A | SE207183.023<br>Soil<br>04 Jun 2020<br>WC-11A | SE207183.024<br>Soil<br>04 Jun 2020<br>TP-24 |
|---|---|---|---|---|---|---|
| **Fibre Identification in soil Method: AN602 Tested: 12/6/2020** | | | | | | |
| FibreID | | | | | | |
| Asbestos Detected | No unit | - | No | No | No | - |
| SemiQuant | | | | | | |
| Estimated Fibres* | %w/w | 0.01 | <0.01 | <0.01 | <0.01 | - |
| **Fibre ID in bulk materials Method: AN602 Tested: 15/6/2020** | | | | | | |
| FibreID | | | | | | |
| Asbestos Detected | No unit | - | - | - | - | - |

| Parameter | Units | LOR | Sample Number: SE207183.025<br>Sample Matrix: Soil<br>Sample Date: 04 Jun 2020<br>Sample Name: TP-25 | SE207183.026<br>Soil<br>04 Jun 2020<br>TP-26 | SE207183.027<br>Soil<br>04 Jun 2020<br>TP-27 | SE207183.028<br>Soil<br>04 Jun 2020<br>TP-28 |
|---|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433 Tested: 15/6/2020** | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | - | - | - | - |
| Toluene | mg/kg | 0.1 | - | - | - | - |
| Ethylbenzene | mg/kg | 0.1 | - | - | - | - |
| m/p-xylene | mg/kg | 0.2 | - | - | - | - |
| o-xylene | mg/kg | 0.1 | - | - | - | - |
| Polycyclic VOCs | | | | | | |
| Naphthalene | mg/kg | 0.1 | - | - | - | - |
| Surrogates | | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - | - | - |
| d8-toluene (Surrogate) | % | - | - | - | - | - |
| Bromofluorobenzene (Surrogate) | % | - | - | - | - | - |
| Totals | | | | | | |
| Total Xylenes | mg/kg | 0.3 | - | - | - | - |
| Total BTEX | mg/kg | 0.6 | - | - | - | - |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 15/6/2020** | | | | | | |
| TRH C6-C10 | mg/kg | 25 | - | - | - | - |
| TRH C6-C9 | mg/kg | 20 | - | - | - | - |
| Surrogates | | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - | - | - |
| d8-toluene (Surrogate) | % | - | - | - | - | - |
| Bromofluorobenzene (Surrogate) | % | - | - | - | - | - |
| VPH F Bands | | | | | | |
| Benzene (F0) | mg/kg | 0.1 | - | - | - | - |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.025<br>Soil<br>04 Jun 2020<br>TP-25 | SE207183.026<br>Soil<br>04 Jun 2020<br>TP-26 | SE207183.027<br>Soil<br>04 Jun 2020<br>TP-27 | SE207183.028<br>Soil<br>04 Jun 2020<br>TP-28 |
|---|---|---|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 12/6/2020** | | | | | | | |
| TRH C10-C14 | mg/kg | 20 | | - | - | - | - |
| TRH C15-C28 | mg/kg | 45 | | - | - | - | - |
| TRH C29-C36 | mg/kg | 45 | | - | - | - | - |
| TRH C37-C40 | mg/kg | 100 | | - | - | - | - |
| TRH C10-C36 Total | mg/kg | 110 | | - | - | - | - |
| TRH >C10-C40 Total (F bands) | mg/kg | 210 | | - | - | - | - |
| TRH F Bands | | | | | | | |
| TRH >C10-C16 | mg/kg | 25 | | - | - | - | - |
| TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | | - | - | - | - |
| TRH >C16-C34 (F3) | mg/kg | 90 | | - | - | - | - |
| TRH >C34-C40 (F4) | mg/kg | 120 | | - | - | - | - |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 12/6/2020** | | | | | | | |
| Naphthalene | mg/kg | 0.1 | | - | - | - | - |
| 2-methylnaphthalene | mg/kg | 0.1 | | - | - | - | - |
| 1-methylnaphthalene | mg/kg | 0.1 | | - | - | - | - |
| Acenaphthylene | mg/kg | 0.1 | | - | - | - | - |
| Acenaphthene | mg/kg | 0.1 | | - | - | - | - |
| Fluorene | mg/kg | 0.1 | | - | - | - | - |
| Phenanthrene | mg/kg | 0.1 | | - | - | - | - |
| Anthracene | mg/kg | 0.1 | | - | - | - | - |
| Fluoranthene | mg/kg | 0.1 | | - | - | - | - |
| Pyrene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(a)anthracene | mg/kg | 0.1 | | - | - | - | - |
| Chrysene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(a)pyrene | mg/kg | 0.1 | | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | | - | - | - | - |
| Dibenzo(ah)anthracene | mg/kg | 0.1 | | - | - | - | - |
| Benzo(ghi)perylene | mg/kg | 0.1 | | - | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=0 | TEQ (mg/kg) | 0.2 | | - | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 0.3 | | - | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | TEQ (mg/kg) | 0.2 | | - | - | - | - |
| Total PAH (18) | mg/kg | 0.8 | | - | - | - | - |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | | - | - | - | - |
| Surrogates | | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | - | - | - | - |
| 2-fluorobiphenyl (Surrogate) | % | - | | - | - | - | - |
| d14-p-terphenyl (Surrogate) | % | - | | - | - | - | - |
| **Speciated Phenols in Soil Method: AN420 Tested: 15/6/2020** | | | | | | | |
| Phenol | mg/kg | 0.5 | | - | - | - | - |
| 2-methyl phenol (o-cresol) | mg/kg | 0.5 | | - | - | - | - |
| 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | | - | - | - | - |
| Total Cresol | mg/kg | 1.5 | | - | - | - | - |
| 2-chlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4-dimethylphenol | mg/kg | 0.5 | | - | - | - | - |
| 2,6-dichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4-dichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4,6-trichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2-nitrophenol | mg/kg | 0.5 | | - | - | - | - |
| 4-nitrophenol | mg/kg | 1 | | - | - | - | - |
| 2,4,5-trichlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | | - | - | - | - |
| Pentachlorophenol | mg/kg | 0.5 | | - | - | - | - |
| 2,4-dinitrophenol | mg/kg | 2 | | - | - | - | - |
| 4-chloro-3-methylphenol | mg/kg | 2 | | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.025<br>Soil<br>04 Jun 2020<br>TP-25 | SE207183.026<br>Soil<br>04 Jun 2020<br>TP-26 | SE207183.027<br>Soil<br>04 Jun 2020<br>TP-27 | SE207183.028<br>Soil<br>04 Jun 2020<br>TP-28 |
|---|---|---|---|---|---|---|---|
| **Speciated Phenols in Soil Method: AN420 Tested: 15/6/2020 (continued)** | | | | | | | |
| Surrogates | | | | | | | |
| 2,4,6-Tribromophenol (Surrogate) | % | - | | - | - | - | - |
| d5-phenol (Surrogate) | % | - | | - | - | - | - |
| **OC Pesticides in Soil Method: AN420 Tested: 15/6/2020** | | | | | | | |
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | | - | - | - | - |
| Alpha BHC | mg/kg | 0.1 | | - | - | - | - |
| Lindane | mg/kg | 0.1 | | - | - | - | - |
| Heptachlor | mg/kg | 0.1 | | - | - | - | - |
| Aldrin | mg/kg | 0.1 | | - | - | - | - |
| Beta BHC | mg/kg | 0.1 | | - | - | - | - |
| Delta BHC | mg/kg | 0.1 | | - | - | - | - |
| Heptachlor epoxide | mg/kg | 0.1 | | - | - | - | - |
| o,p'-DDE | mg/kg | 0.1 | | - | - | - | - |
| Alpha Endosulfan | mg/kg | 0.2 | | - | - | - | - |
| Gamma Chlordane | mg/kg | 0.1 | | - | - | - | - |
| Alpha Chlordane | mg/kg | 0.1 | | - | - | - | - |
| trans-Nonachlor | mg/kg | 0.1 | | - | - | - | - |
| p,p'-DDE | mg/kg | 0.1 | | - | - | - | - |
| Dieldrin | mg/kg | 0.2 | | - | - | - | - |
| Endrin | mg/kg | 0.2 | | - | - | - | - |
| o,p'-DDD | mg/kg | 0.1 | | - | - | - | - |
| o,p'-DDT | mg/kg | 0.1 | | - | - | - | - |
| Beta Endosulfan | mg/kg | 0.2 | | - | - | - | - |
| p,p'-DDD | mg/kg | 0.1 | | - | - | - | - |
| p,p'-DDT | mg/kg | 0.1 | | - | - | - | - |
| Endosulfan sulphate | mg/kg | 0.1 | | - | - | - | - |
| Endrin Aldehyde | mg/kg | 0.1 | | - | - | - | - |
| Methoxychlor | mg/kg | 0.1 | | - | - | - | - |
| Endrin Ketone | mg/kg | 0.1 | | - | - | - | - |
| Isodrin | mg/kg | 0.1 | | - | - | - | - |
| Mirex | mg/kg | 0.1 | | - | - | - | - |
| Total CLP OC Pesticides | mg/kg | 1 | | - | - | - | - |
| Surrogates | | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | | - | - | - | - |
| **OP Pesticides in Soil Method: AN420 Tested: 12/6/2020** | | | | | | | |
| Dichlorvos | mg/kg | 0.5 | | - | - | - | - |
| Dimethoate | mg/kg | 0.5 | | - | - | - | - |
| Diazinon (Dimpylate) | mg/kg | 0.5 | | - | - | - | - |
| Fenitrothion | mg/kg | 0.2 | | - | - | - | - |
| Malathion | mg/kg | 0.2 | | - | - | - | - |
| Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 0.2 | | - | - | - | - |
| Parathion-ethyl (Parathion) | mg/kg | 0.2 | | - | - | - | - |
| Bromophos Ethyl | mg/kg | 0.2 | | - | - | - | - |
| Methidathion | mg/kg | 0.5 | | - | - | - | - |
| Ethion | mg/kg | 0.2 | | - | - | - | - |
| Azinphos-methyl (Guthion) | mg/kg | 0.2 | | - | - | - | - |
| Total OP Pesticides* | mg/kg | 1.7 | | - | - | - | - |
| Surrogates | | | | | | | |
| 2-fluorobiphenyl (Surrogate) | % | - | | - | - | - | - |
| d14-p-terphenyl (Surrogate) | % | - | | - | - | - | - |

| Parameter | Units | LOR | Sample Number: SE207183.025<br>Sample Matrix: Soil<br>Sample Date: 04 Jun 2020<br>Sample Name: TP-25 | SE207183.026<br>Soil<br>04 Jun 2020<br>TP-26 | SE207183.027<br>Soil<br>04 Jun 2020<br>TP-27 | SE207183.028<br>Soil<br>04 Jun 2020<br>TP-28 |
|---|---|---|---|---|---|---|
| **PCBs in Soil Method: AN420 Tested: 15/6/2020** | | | | | | |
| Arochlor 1016 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1221 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1232 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1242 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1248 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1254 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1260 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1262 | mg/kg | 0.2 | - | - | - | - |
| Arochlor 1268 | mg/kg | 0.2 | - | - | - | - |
| Total PCBs (Arochlors) | mg/kg | 1 | - | - | - | - |
| Surrogates | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | - | - | - | - |
| **Total Cyanide in soil by Discrete Analyser (Aquakem) Method: AN077/AN287 Tested: 15/6/2020** | | | | | | |
| Total Cyanide | mg/kg | 0.5 | - | - | - | - |
| Cyanide Amenable to Chlorination* | mg/kg | 0.5 | - | - | - | - |
| **Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 9/6/2020** | | | | | | |
| Arsenic, As | mg/kg | 1 | **72** | **6** | **130** | **25** |
| Cadmium, Cd | mg/kg | 0.3 | **1.3** | <0.3 | **2.1** | **0.6** |
| Chromium, Cr | mg/kg | 0.5 | **22** | **4.5** | **32** | **31** |
| Copper, Cu | mg/kg | 0.5 | **340** | **8.3** | **1100** | **260** |
| Nickel, Ni | mg/kg | 0.5 | **4.6** | **9.1** | **5.5** | **8.6** |
| Lead, Pb | mg/kg | 1 | **500** | **5** | **2700** | **330** |
| Zinc, Zn | mg/kg | 2 | **8500** | **41** | **22000** | **6200** |
| **Mercury in Soil Method: AN312 Tested: 9/6/2020** | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| **Moisture Content Method: AN002 Tested: 9/6/2020** | | | | | | |
| % Moisture | %w/w | 1 | **4.1** | **6.0** | **4.2** | **8.8** |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.025<br>Soil<br>04 Jun 2020<br>TP-25 | SE207183.026<br>Soil<br>04 Jun 2020<br>TP-26 | SE207183.027<br>Soil<br>04 Jun 2020<br>TP-27 | SE207183.028<br>Soil<br>04 Jun 2020<br>TP-28 |
|---|---|---|---|---|---|---|---|
| **Fibre Identification in soil Method: AN602 Tested: 15/6/2020** | | | | | | | |
| FibreID | | | | | | | |
| Asbestos Detected | No unit | - | | - | - | - | - |
| SemiQuant | | | | | | | |
| Estimated Fibres* | %w/w | 0.01 | | - | - | - | - |
| **Fibre ID in bulk materials Method: AN602 Tested: 15/6/2020** | | | | | | | |
| FibreID | | | | | | | |
| Asbestos Detected | No unit | - | | - | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE207183.029<br>Soil<br>04 Jun 2020<br>TP-29 | SE207183.030<br>Soil<br>04 Jun 2020<br>TP-30 | SE207183.031<br>Soil<br>04 Jun 2020<br>TP-31 |
|---|---|---|---|---|---|
| **VOC's in Soil Method: AN433 Tested: 15/6/2020** | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | |
| Benzene | mg/kg | 0.1 | - | - | - |
| Toluene | mg/kg | 0.1 | - | - | - |
| Ethylbenzene | mg/kg | 0.1 | - | - | - |
| m/p-xylene | mg/kg | 0.2 | - | - | - |
| o-xylene | mg/kg | 0.1 | - | - | - |
| Polycyclic VOCs | | | | | |
| Naphthalene | mg/kg | 0.1 | - | - | - |
| Surrogates | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - | - |
| d8-toluene (Surrogate) | % | - | - | - | - |
| Bromofluorobenzene (Surrogate) | % | - | - | - | - |
| Totals | | | | | |
| Total Xylenes | mg/kg | 0.3 | - | - | - |
| Total BTEX | mg/kg | 0.6 | - | - | - |
| **Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 15/6/2020** | | | | | |
| TRH C6-C10 | mg/kg | 25 | - | - | - |
| TRH C6-C9 | mg/kg | 20 | - | - | - |
| Surrogates | | | | | |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - | - |
| d8-toluene (Surrogate) | % | - | - | - | - |
| Bromofluorobenzene (Surrogate) | % | - | - | - | - |
| VPH F Bands | | | | | |
| Benzene (F0) | mg/kg | 0.1 | - | - | - |
| TRH C6-C10 minus BTEX (F1) | mg/kg | 25 | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.029<br>Soil<br>04 Jun 2020<br>TP-29 | SE207183.030<br>Soil<br>04 Jun 2020<br>TP-30 | SE207183.031<br>Soil<br>04 Jun 2020<br>TP-31 |
|---|---|---|---|---|---|---|
| **TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 12/6/2020** | | | | | | |
| TRH C10-C14 | mg/kg | 20 | | - | - | - |
| TRH C15-C28 | mg/kg | 45 | | - | - | - |
| TRH C29-C36 | mg/kg | 45 | | - | - | - |
| TRH C37-C40 | mg/kg | 100 | | - | - | - |
| TRH C10-C36 Total | mg/kg | 110 | | - | - | - |
| TRH >C10-C40 Total (F bands) | mg/kg | 210 | | - | - | - |
| TRH F Bands | | | | | | |
| TRH >C10-C16 | mg/kg | 25 | | - | - | - |
| TRH >C10-C16 - Naphthalene (F2) | mg/kg | 25 | | - | - | - |
| TRH >C16-C34 (F3) | mg/kg | 90 | | - | - | - |
| TRH >C34-C40 (F4) | mg/kg | 120 | | - | - | - |
| **PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 12/6/2020** | | | | | | |
| Naphthalene | mg/kg | 0.1 | | - | - | - |
| 2-methylnaphthalene | mg/kg | 0.1 | | - | - | - |
| 1-methylnaphthalene | mg/kg | 0.1 | | - | - | - |
| Acenaphthylene | mg/kg | 0.1 | | - | - | - |
| Acenaphthene | mg/kg | 0.1 | | - | - | - |
| Fluorene | mg/kg | 0.1 | | - | - | - |
| Phenanthrene | mg/kg | 0.1 | | - | - | - |
| Anthracene | mg/kg | 0.1 | | - | - | - |
| Fluoranthene | mg/kg | 0.1 | | - | - | - |
| Pyrene | mg/kg | 0.1 | | - | - | - |
| Benzo(a)anthracene | mg/kg | 0.1 | | - | - | - |
| Chrysene | mg/kg | 0.1 | | - | - | - |
| Benzo(b&j)fluoranthene | mg/kg | 0.1 | | - | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.1 | | - | - | - |
| Benzo(a)pyrene | mg/kg | 0.1 | | - | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | | - | - | - |
| Dibenzo(ah)anthracene | mg/kg | 0.1 | | - | - | - |
| Benzo(ghi)perylene | mg/kg | 0.1 | | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=0 | TEQ (mg/kg) | 0.2 | | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR | TEQ (mg/kg) | 0.3 | | - | - | - |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | TEQ (mg/kg) | 0.2 | | - | - | - |
| Total PAH (18) | mg/kg | 0.8 | | - | - | - |
| Total PAH (NEPM/WHO 16) | mg/kg | 0.8 | | - | - | - |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | | - | - | - |
| 2-fluorobiphenyl (Surrogate) | % | - | | - | - | - |
| d14-p-terphenyl (Surrogate) | % | - | | - | - | - |
| **Speciated Phenols in Soil Method: AN420 Tested: 15/6/2020** | | | | | | |
| Phenol | mg/kg | 0.5 | | - | - | - |
| 2-methyl phenol (o-cresol) | mg/kg | 0.5 | | - | - | - |
| 3/4-methyl phenol (m/p-cresol) | mg/kg | 1 | | - | - | - |
| Total Cresol | mg/kg | 1.5 | | - | - | - |
| 2-chlorophenol | mg/kg | 0.5 | | - | - | - |
| 2,4-dimethylphenol | mg/kg | 0.5 | | - | - | - |
| 2,6-dichlorophenol | mg/kg | 0.5 | | - | - | - |
| 2,4-dichlorophenol | mg/kg | 0.5 | | - | - | - |
| 2,4,6-trichlorophenol | mg/kg | 0.5 | | - | - | - |
| 2-nitrophenol | mg/kg | 0.5 | | - | - | - |
| 4-nitrophenol | mg/kg | 1 | | - | - | - |
| 2,4,5-trichlorophenol | mg/kg | 0.5 | | - | - | - |
| 2,3,4,6/2,3,5,6-tetrachlorophenol | mg/kg | 1 | | - | - | - |
| Pentachlorophenol | mg/kg | 0.5 | | - | - | - |
| 2,4-dinitrophenol | mg/kg | 2 | | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.029<br>Soil<br>04 Jun 2020<br>TP-29 | SE207183.030<br>Soil<br>04 Jun 2020<br>TP-30 | SE207183.031<br>Soil<br>04 Jun 2020<br>TP-31 |
|---|---|---|---|---|---|---|
| **Speciated Phenols in Soil Method: AN420 Tested: 15/6/2020 (continued)** | | | | | | |
| 4-chloro-3-methylphenol | mg/kg | 2 | | - | - | - |
| Surrogates | | | | | | |
| 2,4,6-Tribromophenol (Surrogate) | % | - | | - | - | - |
| d5-phenol (Surrogate) | % | - | | - | - | - |
| **OC Pesticides in Soil Method: AN420 Tested: 15/6/2020** | | | | | | |
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | | - | - | - |
| Alpha BHC | mg/kg | 0.1 | | - | - | - |
| Lindane | mg/kg | 0.1 | | - | - | - |
| Heptachlor | mg/kg | 0.1 | | - | - | - |
| Aldrin | mg/kg | 0.1 | | - | - | - |
| Beta BHC | mg/kg | 0.1 | | - | - | - |
| Delta BHC | mg/kg | 0.1 | | - | - | - |
| Heptachlor epoxide | mg/kg | 0.1 | | - | - | - |
| o,p'-DDE | mg/kg | 0.1 | | - | - | - |
| Alpha Endosulfan | mg/kg | 0.2 | | - | - | - |
| Gamma Chlordane | mg/kg | 0.1 | | - | - | - |
| Alpha Chlordane | mg/kg | 0.1 | | - | - | - |
| trans-Nonachlor | mg/kg | 0.1 | | - | - | - |
| p,p'-DDE | mg/kg | 0.1 | | - | - | - |
| Dieldrin | mg/kg | 0.2 | | - | - | - |
| Endrin | mg/kg | 0.2 | | - | - | - |
| o,p'-DDD | mg/kg | 0.1 | | - | - | - |
| o,p'-DDT | mg/kg | 0.1 | | - | - | - |
| Beta Endosulfan | mg/kg | 0.2 | | - | - | - |
| p,p'-DDD | mg/kg | 0.1 | | - | - | - |
| p,p'-DDT | mg/kg | 0.1 | | - | - | - |
| Endosulfan sulphate | mg/kg | 0.1 | | - | - | - |
| Endrin Aldehyde | mg/kg | 0.1 | | - | - | - |
| Methoxychlor | mg/kg | 0.1 | | - | - | - |
| Endrin Ketone | mg/kg | 0.1 | | - | - | - |
| Isodrin | mg/kg | 0.1 | | - | - | - |
| Mirex | mg/kg | 0.1 | | - | - | - |
| Total CLP OC Pesticides | mg/kg | 1 | | - | - | - |
| Surrogates | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | | - | - | - |
| **OP Pesticides in Soil Method: AN420 Tested: 12/6/2020** | | | | | | |
| Dichlorvos | mg/kg | 0.5 | | - | - | - |
| Dimethoate | mg/kg | 0.5 | | - | - | - |
| Diazinon (Dimpylate) | mg/kg | 0.5 | | - | - | - |
| Fenitrothion | mg/kg | 0.2 | | - | - | - |
| Malathion | mg/kg | 0.2 | | - | - | - |
| Chlorpyrifos (Chlorpyrifos Ethyl) | mg/kg | 0.2 | | - | - | - |
| Parathion-ethyl (Parathion) | mg/kg | 0.2 | | - | - | - |
| Bromophos Ethyl | mg/kg | 0.2 | | - | - | - |
| Methidathion | mg/kg | 0.5 | | - | - | - |
| Ethion | mg/kg | 0.2 | | - | - | - |
| Azinphos-methyl (Guthion) | mg/kg | 0.2 | | - | - | - |
| Total OP Pesticides* | mg/kg | 1.7 | | - | - | - |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE207183.029<br>Soil<br>04 Jun 2020<br>TP-29 | SE207183.030<br>Soil<br>04 Jun 2020<br>TP-30 | SE207183.031<br>Soil<br>04 Jun 2020<br>TP-31 |
|---|---|---|---|---|---|
| **OP Pesticides in Soil Method: AN420 Tested: 12/6/2020 (continued)** | | | | | |
| Surrogates | | | | | |
| 2-fluorobiphenyl (Surrogate) | % | - | - | - | - |
| d14-p-terphenyl (Surrogate) | % | - | - | - | - |
| **PCBs in Soil Method: AN420 Tested: 15/6/2020** | | | | | |
| Arochlor 1016 | mg/kg | 0.2 | - | - | - |
| Arochlor 1221 | mg/kg | 0.2 | - | - | - |
| Arochlor 1232 | mg/kg | 0.2 | - | - | - |
| Arochlor 1242 | mg/kg | 0.2 | - | - | - |
| Arochlor 1248 | mg/kg | 0.2 | - | - | - |
| Arochlor 1254 | mg/kg | 0.2 | - | - | - |
| Arochlor 1260 | mg/kg | 0.2 | - | - | - |
| Arochlor 1262 | mg/kg | 0.2 | - | - | - |
| Arochlor 1268 | mg/kg | 0.2 | - | - | - |
| Total PCBs (Arochlors) | mg/kg | 1 | - | - | - |
| Surrogates | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | - | - | - |
| **Total Cyanide in soil by Discrete Analyser (Aquakem) Method: AN077/AN287 Tested: 15/6/2020** | | | | | |
| Total Cyanide | mg/kg | 0.5 | - | - | - |
| Cyanide Amenable to Chlorination* | mg/kg | 0.5 | - | - | - |
| **Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 9/6/2020** | | | | | |
| Arsenic, As | mg/kg | 1 | **18** | **6** | **21** |
| Cadmium, Cd | mg/kg | 0.3 | **0.4** | <0.3 | **0.6** |
| Chromium, Cr | mg/kg | 0.5 | **35** | **4.8** | **18** |
| Copper, Cu | mg/kg | 0.5 | **280** | **9.0** | **460** |
| Nickel, Ni | mg/kg | 0.5 | **3.1** | **9.7** | **2.9** |
| Lead, Pb | mg/kg | 1 | **520** | **7** | **790** |
| Zinc, Zn | mg/kg | 2 | **8300** | **54** | **12000** |
| **Mercury in Soil Method: AN312 Tested: 9/6/2020** | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 |

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name | SE207183.029<br>Soil<br>04 Jun 2020<br>TP-29 | SE207183.030<br>Soil<br>04 Jun 2020<br>TP-30 | SE207183.031<br>Soil<br>04 Jun 2020<br>TP-31 |
|---|---|---|---|---|---|---|
| **Moisture Content Method: AN002 Tested: 9/6/2020** | | | | | | |
| % Moisture | %w/w | 1 | | **6.8** | **7.1** | **7.2** |
| **Fibre Identification in soil Method: AN602 Tested: 15/6/2020** | | | | | | |
| FibreID | | | | | | |
| Asbestos Detected | No unit | - | | - | - | - |
| SemiQuant | | | | | | |
| Estimated Fibres* | %w/w | 0.01 | | - | - | - |
| **Fibre ID in bulk materials Method: AN602 Tested: 15/6/2020** | | | | | | |
| FibreID | | | | | | |
| Asbestos Detected | No unit | - | | - | - | - |

# QC SUMMARY

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.

**Mercury in Soil** **Method: ME-(AU)-[ENV]AN312**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Mercury | LB201550 | mg/kg | 0.05 | <0.05 | 0% | 109% | 109% |

**Moisture Content** **Method: ME-(AU)-[ENV]AN002**

| Parameter | QC Reference | Units | LOR | DUP %RPD |
|---|---|---|---|---|
| % Moisture | LB201473 | %w/w | 1 | 2 - 6% |

**OC Pesticides in Soil** **Method: ME-(AU)-[ENV]AN420**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Hexachlorobenzene (HCB) | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Alpha BHC | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Lindane | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Heptachlor | LB201474 | mg/kg | 0.1 | <0.1 | 0% | 105% | 106% |
| Aldrin | LB201474 | mg/kg | 0.1 | <0.1 | 0% | 108% | 107% |
| Beta BHC | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Delta BHC | LB201474 | mg/kg | 0.1 | <0.1 | 0% | 106% | 106% |
| Heptachlor epoxide | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| o,p'-DDE | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Alpha Endosulfan | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Gamma Chlordane | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Alpha Chlordane | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| trans-Nonachlor | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| p,p'-DDE | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Dieldrin | LB201474 | mg/kg | 0.2 | <0.2 | 0% | 105% | 103% |
| Endrin | LB201474 | mg/kg | 0.2 | <0.2 | 0% | 103% | 102% |
| o,p'-DDD | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| o,p'-DDT | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Beta Endosulfan | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| p,p'-DDD | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| p,p'-DDT | LB201474 | mg/kg | 0.1 | <0.1 | 0% | 81% | 71% |
| Endosulfan sulphate | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Endrin Aldehyde | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Methoxychlor | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Endrin Ketone | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Isodrin | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Mirex | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Total CLP OC Pesticides | LB201474 | mg/kg | 1 | <1 | 0% | NA | NA |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene (TCMX) (Surrogate) | LB201474 | % | - | 101% | 3% | 96% | 101% |

# QC SUMMARY

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.

**OP Pesticides in Soil** **Method: ME-(AU)-[ENV]AN420**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Dichlorvos | LB201474 | mg/kg | 0.5 | <0.5 | 0% | 79% | 65% |
| Dimethoate | LB201474 | mg/kg | 0.5 | <0.5 | 0% | NA | NA |
| Diazinon (Dimpylate) | LB201474 | mg/kg | 0.5 | <0.5 | 0% | 85% | 90% |
| Fenitrothion | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Malathion | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Chlorpyrifos (Chlorpyrifos Ethyl) | LB201474 | mg/kg | 0.2 | <0.2 | 0% | 92% | 102% |
| Parathion-ethyl (Parathion) | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Bromophos Ethyl | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Methidathion | LB201474 | mg/kg | 0.5 | <0.5 | 0% | NA | NA |
| Ethion | LB201474 | mg/kg | 0.2 | <0.2 | 0% | 73% | 93% |
| Azinphos-methyl (Guthion) | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Total OP Pesticides* | LB201474 | mg/kg | 1.7 | <1.7 | 0% | NA | NA |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| 2-fluorobiphenyl (Surrogate) | LB201474 | % | - | 83% | 5% | 94% | 92% |
| d14-p-terphenyl (Surrogate) | LB201474 | % | - | 78% | 18% | 69% | 80% |

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil** **Method: ME-(AU)-[ENV]AN420**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Naphthalene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | 103% | 114% |
| 2-methylnaphthalene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| 1-methylnaphthalene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Acenaphthylene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | 96% | 104% |
| Acenaphthene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | 93% | 106% |
| Fluorene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Phenanthrene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | 108% | 96% |
| Anthracene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | 105% | 90% |
| Fluoranthene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | 88% | 109% |
| Pyrene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | 99% | 108% |
| Benzo(a)anthracene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Chrysene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Benzo(b&j)fluoranthene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Benzo(k)fluoranthene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Benzo(a)pyrene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | 92% | 120% |
| Indeno(1,2,3-cd)pyrene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Dibenzo(ah)anthracene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Benzo(ghi)perylene | LB201474 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Carcinogenic PAHs, BaP TEQ <LOR=0 | LB201474 | TEQ (mg/kg) | 0.2 | <0.2 | 0% | NA | NA |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR | LB201474 | TEQ (mg/kg) | 0.3 | <0.3 | 0% | NA | NA |
| Carcinogenic PAHs, BaP TEQ <LOR=LOR/2 | LB201474 | TEQ (mg/kg) | 0.2 | <0.2 | 0% | NA | NA |
| Total PAH (18) | LB201474 | mg/kg | 0.8 | <0.8 | 0% | NA | NA |
| Total PAH (NEPM/WHO 16) | LB201474 | mg/kg | 0.8 | <0.8 | | | |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| d5-nitrobenzene (Surrogate) | LB201474 | % | - | 93% | 2% | 96% | 97% |
| 2-fluorobiphenyl (Surrogate) | LB201474 | % | - | 83% | 5% | 94% | 92% |
| d14-p-terphenyl (Surrogate) | LB201474 | % | - | 78% | 18% | 69% | 80% |

# QC SUMMARY

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.

**PCBs in Soil** **Method: ME-(AU)-[ENV]AN420**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Arochlor 1016 | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Arochlor 1221 | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Arochlor 1232 | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Arochlor 1242 | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Arochlor 1248 | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Arochlor 1254 | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Arochlor 1260 | LB201474 | mg/kg | 0.2 | <0.2 | 0% | 97% | 96% |
| Arochlor 1262 | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Arochlor 1268 | LB201474 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Total PCBs (Arochlors) | LB201474 | mg/kg | 1 | <1 | 0% | NA | NA |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene (TCMX) (Surrogate) | LB201474 | % | - | 101% | 3% | 100% | 104% |

**Speciated Phenols in Soil** **Method: ME-(AU)-[ENV]AN420**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Phenol | LB201474 | mg/kg | 0.5 | <0.5 | 0% | 74% | 74% |
| 2-methyl phenol (o-cresol) | LB201474 | mg/kg | 0.5 | <0.5 | 0% | NA | NA |
| 3/4-methyl phenol (m/p-cresol) | LB201474 | mg/kg | 1 | <1 | 0% | NA | NA |
| Total Cresol | LB201474 | mg/kg | 1.5 | <1.5 | 0% | NA | NA |
| 2-chlorophenol | LB201474 | mg/kg | 0.5 | <0.5 | 0% | NA | NA |
| 2,4-dimethylphenol | LB201474 | mg/kg | 0.5 | <0.5 | 0% | NA | NA |
| 2,6-dichlorophenol | LB201474 | mg/kg | 0.5 | <0.5 | 0% | NA | NA |
| 2,4-dichlorophenol | LB201474 | mg/kg | 0.5 | <0.5 | 0% | 88% | 87% |
| 2,4,6-trichlorophenol | LB201474 | mg/kg | 0.5 | <0.5 | 0% | 70% | 74% |
| 2-nitrophenol | LB201474 | mg/kg | 0.5 | <0.5 | 0% | NA | NA |
| 4-nitrophenol | LB201474 | mg/kg | 1 | <1 | 0% | NA | NA |
| 2,4,5-trichlorophenol | LB201474 | mg/kg | 0.5 | <0.5 | 0% | NA | NA |
| 2,3,4,6/2,3,5,6-tetrachlorophenol | LB201474 | mg/kg | 1 | <1 | 0% | NA | NA |
| Pentachlorophenol | LB201474 | mg/kg | 0.5 | <0.5 | 0% | 72% | 76% |
| 2,4-dinitrophenol | LB201474 | mg/kg | 2 | <2 | 0% | NA | NA |
| 4-chloro-3-methylphenol | LB201474 | mg/kg | 2 | <2 | 0% | NA | NA |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| 2,4,6-Tribromophenol (Surrogate) | LB201474 | % | - | 88% | 2% | 87% | 85% |
| d5-phenol (Surrogate) | LB201474 | % | - | 86% | 0% | 84% | 79% |

# QC SUMMARY

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.

**Total Cyanide in soil by Discrete Analyser (Aquakem)** **Method: ME-(AU)-[ENV]AN077/AN287**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Total Cyanide | LB201896 | mg/kg | 0.5 | <0.5 | 0% | 111% | 99% |

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES** **Method: ME-(AU)-[ENV]AN040/AN320**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Arsenic, As | LB201546 | mg/kg | 1 | <1 | 7 - 94% | 99% | 94% |
| Cadmium, Cd | LB201546 | mg/kg | 0.3 | <0.3 | 0 - 61% | 100% | 83% |
| Chromium, Cr | LB201546 | mg/kg | 0.5 | <0.5 | 17 - 22% | 91% | 102% |
| Copper, Cu | LB201546 | mg/kg | 0.5 | <0.5 | 17 - 24% | 98% | 102% |
| Nickel, Ni | LB201546 | mg/kg | 0.5 | <0.5 | 3 - 29% | 94% | 96% |
| Lead, Pb | LB201546 | mg/kg | 1 | <1 | 14 - 25% | 100% | 102% |
| Zinc, Zn | LB201546 | mg/kg | 2 | <2.0 | 14 - 15% | 97% | 168% |

**TRH (Total Recoverable Hydrocarbons) in Soil** **Method: ME-(AU)-[ENV]AN403**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | LB201474 | mg/kg | 20 | <20 | 0% | 88% | 88% |
| TRH C15-C28 | LB201474 | mg/kg | 45 | <45 | 0% | 80% | 80% |
| TRH C29-C36 | LB201474 | mg/kg | 45 | <45 | 0% | 65% | 68% |
| TRH C37-C40 | LB201474 | mg/kg | 100 | <100 | 0% | NA | NA |
| TRH C10-C36 Total | LB201474 | mg/kg | 110 | <110 | 0% | NA | NA |
| TRH >C10-C40 Total (F bands) | LB201474 | mg/kg | 210 | <210 | 0% | NA | NA |

TRH F Bands

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| TRH >C10-C16 | LB201474 | mg/kg | 25 | <25 | 0% | 85% | 85% |
| TRH >C10-C16 - Naphthalene (F2) | LB201474 | mg/kg | 25 | <25 | 0% | NA | NA |
| TRH >C16-C34 (F3) | LB201474 | mg/kg | 90 | <90 | 0% | 75% | 78% |
| TRH >C34-C40 (F4) | LB201474 | mg/kg | 120 | <120 | 0% | 65% | NA |

# QC SUMMARY

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.

## VOC's in Soil Method: ME-(AU)-[ENV]AN433

Monocyclic Aromatic Hydrocarbons

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Benzene | LB201475 | mg/kg | 0.1 | <0.1 | 0% | 76% | 73% |
| Toluene | LB201475 | mg/kg | 0.1 | <0.1 | 0% | 78% | 76% |
| Ethylbenzene | LB201475 | mg/kg | 0.1 | <0.1 | 0% | 78% | 76% |
| m/p-xylene | LB201475 | mg/kg | 0.2 | <0.2 | 0% | 79% | 77% |
| o-xylene | LB201475 | mg/kg | 0.1 | <0.1 | 0% | 77% | 76% |

Polycyclic VOCs

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Naphthalene | LB201475 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| d4-1,2-dichloroethane (Surrogate) | LB201475 | % | - | 111% | 13% | 108% | 105% |
| d8-toluene (Surrogate) | LB201475 | % | - | 107% | 13% | 110% | 107% |
| Bromofluorobenzene (Surrogate) | LB201475 | % | - | 102% | 15% | 96% | 94% |

Totals

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Total Xylenes | LB201475 | mg/kg | 0.3 | <0.3 | 0% | NA | NA |
| Total BTEX | LB201475 | mg/kg | 0.6 | <0.6 | 0% | NA | NA |

## Volatile Petroleum Hydrocarbons in Soil Method: ME-(AU)-[ENV]AN433

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| TRH C6-C10 | LB201475 | mg/kg | 25 | <25 | 0% | 75% | 73% |
| TRH C6-C9 | LB201475 | mg/kg | 20 | <20 | 0% | 79% | 77% |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| d4-1,2-dichloroethane (Surrogate) | LB201475 | % | - | 111% | 13% | 108% | 105% |
| d8-toluene (Surrogate) | LB201475 | % | - | 107% | 13% | 110% | 107% |
| Bromofluorobenzene (Surrogate) | LB201475 | % | - | 102% | 15% | 96% | 94% |

VPH F Bands

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Benzene (F0) | LB201475 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| TRH C6-C10 minus BTEX (F1) | LB201475 | mg/kg | 25 | <25 | 0% | 74% | 71% |

| 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. |
| 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 ASS or ICP as per USEPA Method 200.8. |
| 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. |
| AN077 | Hydrogen cyanide is liberated from an acidified alkali soil extract by distillation and purging with air. The hydrogen cyanide gas is then collected by passing it through a sodium hydroxide scrubbing solution. The scrubbing solution will then be analysed for cyanide by the appropriate method. |
| AN287 | A buffered distillate or water sample is treated with chloramine/barbituric acid reagents and the intensity of the colour developed is proportional to the cyanide concentration by Aquakem DA. |
| 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 |
| 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). |
| 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. |

# METHOD SUMMARY

| METHOD | METHODOLOGY SUMMARY |
|---|---|
| AN602 | 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 | Fibres/material that cannot be unequivocably 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 | AS4964.2004 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 limit 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 | The sample can be reported “no asbestos found at the reporting limit of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if-<br><br>(a) no trace asbestos fibres have been detected (i.e. no ‘respirable ’ fibres):<br>(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<br>(c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions. |

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 |
| | | QFL | QC result is below the lower tolerance |
| ** | Indicative data, theoretical holding time exceeded. | - | 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 calcuated 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.

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# ANALYTICAL REPORT

Accreditation No. 2562

## CLIENT DETAILS

| | |
|---|---|
| Contact | Craig Wellings |
| Client | EHO CONSULTING PTY LIMITED |
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| Telephone | (Not specified) |
| Facsimile | (Not specified) |
| Email | craig@ehoc.com.au |
| Project | **JN1446 - Tomago** |
| Order Number | (Not specified) |
| Samples | 4 |

## LABORATORY DETAILS

| | |
|---|---|
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| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE207529 R0** |
| Date Received | 16 Jun 2020 |
| Date Reported | 18 Jun 2020 |

## COMMENTS

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

## SIGNATORIES

Dong LIANG
Metals/Inorganics Team Leader

| Parameter | Units | LOR | Sample Number<br>Sample Matrix<br>Sample Date<br>Sample Name<br>SE207529.001<br>Water<br>12 May 2020<br>GW1 | SE207529.002<br>Water<br>12 May 2020<br>GW2 | SE207529.003<br>Water<br>12 May 2020<br>GW3 | SE207529.004<br>Water<br>12 May 2020<br>GW4 |
|---|---|---|---|---|---|---|
| **Trace Metals (Dissolved) in Water by ICPMS Method: AN318 Tested: 16/6/2020** | | | | | | |
| Arsenic, As | µg/L | 1 | **1** | <1 | <1 | <1 |
| Cadmium, Cd | µg/L | 0.1 | **0.1** | **0.1** | <0.1 | **0.1** |
| Chromium, Cr | µg/L | 1 | **1** | **2** | **12** | **1** |
| Copper, Cu | µg/L | 1 | **7** | **6** | **2** | **1** |
| Lead, Pb | µg/L | 1 | <1 | <1 | <1 | <1 |
| Nickel, Ni | µg/L | 1 | **7** | **4** | <1 | **2** |
| Zinc, Zn | µg/L | 5 | **170** | **2000** | **13** | **460** |
| **Mercury (dissolved) in Water Method: AN311(Perth)/AN312 Tested: 18/6/2020** | | | | | | |
| Mercury | mg/L | 0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |

# QC SUMMARY

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.

**Mercury (dissolved) in Water** **Method: ME-(AU)-[ENV]AN311(Perth)/AN312**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery |
|---|---|---|---|---|---|---|
| Mercury | LB202202 | mg/L | 0.0001 | <0.0001 | 0% | 101% |

**Trace Metals (Dissolved) in Water by ICPMS** **Method: ME-(AU)-[ENV]AN318**

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|---|---|---|---|---|---|---|
| Arsenic, As | LB202045 | µg/L | 1 | <1 | 0% | 96% | 119% |
| Cadmium, Cd | LB202045 | µg/L | 0.1 | <0.1 | 0 - 6% | 105% | 107 - 108% |
| Chromium, Cr | LB202045 | µg/L | 1 | <1 | 0 - 3% | 105% | 100% |
| Copper, Cu | LB202045 | µg/L | 1 | <1 | 2% | 111% | 97 - 104% |
| Lead, Pb | LB202045 | µg/L | 1 | <1 | 0% | 107% | 101% |
| Nickel, Ni | LB202045 | µg/L | 1 | <1 | 1 - 3% | 107% | 93% |
| Zinc, Zn | LB202045 | µg/L | 5 | <5 | 0 - 2% | 105% | 69 - 181% |

# METHOD SUMMARY

| 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). |

## 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 |
| | | QFL | QC result is below the lower tolerance |
| ** | Indicative data, theoretical holding time exceeded. | - | 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 calcuated 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.

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