Contamination | Remediation | Geotechnical

DUFFY KENNEDY CONSTRUCTIONS
PTY LTD

Detailed Site Investigation

1 Veno Street, Heathcote NSW

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EXECUTIVE SUMMARY

EI Australia (EI) was engaged by Duffy Kennedy Constructions Pty Ltd (‘the client’) to conduct a Detailed Site Investigation (DSI) of 1 Veno Street, Heathcote NSW 2233 (‘the site’).

At the time of this investigation, the site was occupied by the Heathcote Hotel and attached ‘Bottle Mart’ liquor store, surrounded by on-grade car parking and landscaping areas. The proposed development would involve the demolition of existing structures on site and the construction of two separate mix-use (commercial / residential) four-storey buildings with two basement levels for car parking.

A Preliminary Site Investigation (PSI) with limited sampling was previously completed by EI (2023), which comprised 10 borehole locations. The PSI identified potential contamination in the form of an existing underground storage tank (UST) and asbestos in shallow fill at borehole BH7M, which warranted further investigation. The scope of works of the DSI included:

- An intrusive investigation comprising seven boreholes, followed by multiple level soil sampling of both fill and natural soils,
- Delineation of the asbestos contamination at BH7M;
- Installation of one groundwater monitoring well down-gradient of the UST; and
- One round of monitoring (sampling) within the newly and previously installed groundwater wells for laboratory analysis.

The aim of this investigation was to appraise the environmental condition (potential contamination) and determine the contamination status of the land, in support of a Development Application relating to the construction of a mixed use residential / commercial development. This investigation enables the future developer (if any) to meet obligations under the *Contaminated Land Management Act 1997* and *State Environmental Planning Policy (Resilience and Hazards) 2021*, in particular the requirements for the assessment and management of contaminated soil and groundwater in a mixed use (residential/commercial) land use scenario.

Objectives

The objectives of this investigation were to:

- Provide a qualitative assessment of the environmental condition of the site, by appraising the potential for contamination on the basis of field observations, historical land uses and other documentary evidence, including a quantitative assessment by means of intrusive sampling and laboratory analysis;
- Make recommendations for the appropriate management and/or further assessment of any impacted soils and/or groundwater, should site contamination be confirmed.

Findings

The key findings of this DSI were as follows:

- The site comprised the Heathcote Hotel Inn and Bottle Mart liquor store, surrounded by on-grade parking areas.
- The building structures appeared to be in fair to good condition, with deterioration in the form of paint flaking and cracking of concrete and asphalt observed during the inspection.
- Evidence of an Underground Storage Tank (UST) was observed on the western side of the site which included one dip/fill point and tank vents. The UST dip/fill point was observed to still contain petroleum liquid (EI, 2023). Based on a Ground Penetrating Radar (GPR) scan, the UST is estimated to be 1.8m x 1.6m x 1.0 mBGL.

- Initial soil sampling and analysis was conducted on at 17 October 2023 and included 10 borehole locations (BH1-BH10M). Further detailed assessment was undertaken and included an additional seven borehole locations (BH11-BH17M). The intrusive soil assessment revealed the following:
    - The sub-surface conditions of the site were generalised as a layer of silty clay, clayey sand and gravelly sand filling (0.1m to 0.6m thickness), overlying natural (residual) silty clay, with (weathered) sandstone bedrock occurring at varying depths (0.4 to 2.1 mBGL).
    - An assessment of the soil concentrations against NEPC (2013) human health investigation levels (HIL-B/HSL-D) and ecological investigation/screening levels (EIL/ESL) indicated all samples meeting the adopted criteria.
- Asbestos-containing material (ACM) in the form of a 'fibrous mass' was previously detected within the sample BH7_0.2-0.3 (EI, 2023).
    - Delineation fill samples collected adjacent to BH7M (BH7M-DL1 to BH7M-DL3) reported no asbestos detected.
    - The remainder of samples collected across the site did not contain significant anthropogenic material that could allude to the presence of ACM.
    - It is considered that there is a low risk of widespread asbestos contamination at the site and asbestos contamination is likely limited to an isolated hotspot at location BH7M.
- Initial groundwater sampling and analysis was conducted at three monitoring well locations (BH2M, BH7M, and BH10M) on 26 October 2023 (EI, 2023). Further assessment was undertaken at BH2M, BH10M, and the recently installed well BH17M on 20 June 2024. The results of the groundwater assessments indicated:
    - The hydraulic gradient was inferred to be to the north-west, towards Bottle Gully and then Heathcote Creek.
    - An assessment against the ANZG *Fresh Water Criteria* indicated concentrations of BTEX, VOCs, and phenols to be below the adopted criteria. Concentrations of metals (cadmium, copper, nickel, and zinc) were reported above the adopted ecological criteria. Metal concentrations in groundwater were considered to be representative of background conditions, and of low risk to future occupants and ecological receptors.
    - There were no reported impacts in BH17M, which was installed down-gradient of the previously identified UST. The risk of potential groundwater contamination from the UST at the site is considered low.

Conclusion

Based on the findings of the investigation, it was concluded that there is a low potential of widespread contamination to exist on site. Isolated asbestos contamination at BH7M and the presence of UPSS infrastructure on the western side of the site will require management and remediation in accordance with appropriate guidelines. EI considers that the site can be made suitable for the proposed mixed-use commercial / residential development, provided that the following recommendations (further outlined in **Section 10**) are implemented:

- A Remedial Action Plan (RAP) should be prepared, detailing the methodology and procedures required for effective site remediation.
- Before commencement of demolition works, a Hazardous Materials Survey (HMS) should be completed by a suitably qualified consultant, to confirm the presence/location of any hazardous materials within the existing building fabrics.

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1. INTRODUCTION

1.1. Background and Purpose

EI Australia (EI) was engaged by Duffy Kennedy Constructions Pty Ltd (‘the client’) to conduct a Detailed Site Investigation for the property located at 1 Veno Street, Heathcote NSW (‘the site’).

The site is located within the local government area (LGA) of Sutherland Shire Council (**Figure 1**, **Appendix A**). It covers an area of approximately 7,050 m^2 (**Figure 2**, **Appendix A)** and is further identified as Lots 1, 2, and 3 in Deposited Plan (DP) 455292, and Lots 9, 10, 23, and 24 in DP 2499. At the time of this investigation, the site was occupied by the Heathcote Hotel and attached ‘Bottle Mart’ liquor store, surrounded by car parking and landscaping areas.

A Preliminary Site Investigation (PSI) with limited sampling was previously completed at the site (EI, 2023), which identified asbestos in shallow fill materials at one location, and an underground storage tank in the central-western portion of the site.

The aim of this investigation was to appraise the environmental condition (potential contamination) and determine the contamination status of the land, in support of a Development Application relating to the construction of a mixed use residential / commercial development.

This investigation also enables the future developer (if any) to meet obligations under the *Contaminated Land Management Act 1997* and *State Environmental Planning Policy (Resilience and Hazards) 2021*, in particular the requirements for the assessment and management of contaminated soil and groundwater in a mixed land use scenario (residential/commercial).

1.2. Proposed Development

The following drawings and survey plans were provided and entitled:

- DR Design (2023) *Mixed Use Development – Option 3*, prepared by DR Design Pty Ltd, 1 Veno Street, Heathcote, Project No. 23-049, dated 27 September 2023;
- Boxall (2023) *Plan of Site Detail & Levels*, prepared by Boxall Surveyors, 1 Veno Street, Heathcote, Drawing Reference: 11260-001-A, dated 8 September 2021.

Based on the provided documents (**Appendix C**), EI understands that the proposed development involves the demolition of the existing site structures and the construction of a mixed-use development (residential, retail and hotel) comprising three buildings of five to six-storey high above ground each, across two adjacent allotments (Lots 1 and 2). The two buildings on Lot 2 (denoted in the architectural drawings as building S2 and S2-H) overlie a common two-level basement and share a common ground floor level. The building on Lot 1 (denoted in the architectural drawings as building S1) overlie an individual two-level basement. EI notes that the site is located on sloping land, and as such, the lowest basement levels may only be a partial basement dependant on the location across the site.

The lowest basement level of Building S1 is proposed to have a Finished Floor Level (FFL) of RL182.65m AHD. The ground floor level with FFL of RL185.8m AHD transitions to below ground in the southern portion of the building S1 footprint. The lowest common basement level of Buildings S2 / S2-H is proposed to have a FFL of RL185.25m AHD. Vehicular access into the basement is off Veno Street.

A Bulk Excavation Level (BEL) of RL182.35m AHD for building S1 and RL184.95m AHD for Building S2 / S2-H is assumed, which includes allowance for the construction of the basement slab. To achieve the BEL, excavation depths of between 3.5m to 7m Below Existing Ground

Level (BEGL) within the basement footprint of Building S1, and between 5.3m to 7.6m BEGL within the basement footprint of Building S2 / S2-H have been estimated. Locally deeper excavations may be required for footings, lift overrun pits, crane pads, and service trenches.

Building S1 basement is proposed to be set back 6m from the western and eastern site boundaries and set back 7.5m from the Strickland Street frontage. Deep soil zones have been assumed to be present along outside areas of the basement footprints.

1.3. Project Objectives

The objectives of this investigation were to:

- Provide a qualitative assessment of the environmental conditions of the site, by appraising the potential for contamination on the basis of field observations, historical land uses and other documentary evidence;
- Provide a quantitative assessment of the environmental conditions of the site, by means of intrusive sampling and laboratory analysis for the relevant potential contaminants, and
- Make recommendations for further investigations and appropriate management of any impacted soils and/or groundwater, should site contamination be confirmed.

1.4. Scope of Works

To achieve the above objectives, the following scope of works was completed:

Desktop Study

- Review of relevant topographical, geological and soil landscape maps for the project area;
- Review of previous environmental reports;
- Preparation of an existing conceptual site model (CSM); and
- Data interpretation and reporting.

Fieldwork and Laboratory Analysis

- Review of existing underground services on-site, utilising *Before-You-Dig* plans;
- A detailed site inspection;
- Drilling of test boreholes at seven locations (BH11 to BH17), distributed in a systematic grid across the site;
- Delineation of asbestos hotspot at former borehole BH7M, including targeted drilling of test bores at three locations;
- Multiple level sampling of fill and natural soils at each of the boreholes;
- Installation of groundwater monitoring wells at one location identified as BH17M;
- Completion of a groundwater monitoring event (GME), which included measurement of standing water levels (SWLs) and sampling at the all previously installed wells (BH2M, BH7M, BH10M), and the newly constructed BH17M; and
- Laboratory analysis of selected soil and groundwater samples for the potential contaminants, as determined by the conceptual site model (CSM) and by field observations.

Data Analysis and Reporting

This report documents the desk study findings, the CSM, data quality objectives, sampling methodologies and laboratory analytical results. It also provides a record of observations made during the site walkover inspections, test bore and monitoring well construction logs. It discusses the results in regards to potential risks to human health and the environment and it concludes with a statement concerning the suitability of the site for future redevelopment works, and if any additional investigations should be conducted prior to the future development.

1.5. Regulatory Framework

The following regulatory framework and guidelines were considered during this DSI:

- *Contaminated Land Management Act 1997* (the CLM Act 1997);
- *Environmental Planning and Assessment Act 1979* (the EP&A Act 1979);
- NEPC (2013) *National Environmental Protection (Assessment of Site Contamination) Amendment Measure 1999;*
- NSW EPA (2017) *Guidelines for the NSW Site Auditor Scheme;*
- NSW EPA (2020a) *Consultants Reporting on Contaminated Land: Contaminated Land Guideline*s;
- NSW EPA (2020b) *Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation*;
- NSW EPA (2022) *Sampling Design Part 1 – Application*;
- *Protection of the Environment Operations Act 1997* (the POEO Act 1997);
- *State Environmental Planning Policy (Resilience and Hazards) 2021*; *and*
- *Sutherland Shire Local Environmental Plan 2015.*

2. SITE DESCRIPTION

2.1. Property Identification, Location and Physical Setting

The site identification details and associated information are presented in **Table 2-1**. The site locality and assessment area are illustrated in **Figures 1** and **2**, **Appendix A**.

Table 2-1 Site Identification Details

Attribute	Description
Street Address	1 Veno Street, Heathcote NSW
Location and Description	The site in Heathcote was bound by: ▪ North: Strickland Street, followed by low density residential; ▪ East: Medium density residential and Princes Highway; ▪ South: Veno Street / Princes Highway, followed by Veno Street Reserve and low density residential; ▪ West: Medium density residential, followed by Sydney Wildflower Nursery and Heathcote Public School (southwest).
Geographical Coordinates	Northern-western corner of site (GDA2020-MGA56): Easting: 316285.574 Northing: 6226624.62 (Source: http://maps.six.nsw.gov.au)
Site Area	Approximately 7,050m^2 (**Figure 2**, **Appendix A**) (Source: http://maps.six.nsw.gov.au)
Lot and DP	Lot 1 in DP455292 Lot 2 in DP455292 Lot 3 in DP455292 Lot 9 in DP2499 Lot 10 in DP2499 Lot 23 in DP2499 Lot 24 in DP2499
State Survey Marks	Four state survey marks are situated within close proximity to the site: ▪ SS56873: on Princes Highway (approximately 118 m east); ▪ SS56874: on footpath at intersection between Princes Highway and Veno Street (immediately adjacent south-west); ▪ SS56869 D: on intersection between Veno Street and Rosebery Street (approximately 129m west); ▪ SS56866: on intersection between Stickland Street and King Street (approximately 137m west); (Source: http://maps.six.nsw.gov.au)
LGA	Sutherland Shire Council
Current Zoning	E1: Local Centre (*Sutherland Shire Local Environmental Plan 2015*)

2.2. Local Land Use

The site is situated within an area of mixed use. The local sensitive receptors within close proximity (<500m) to the site are identified in **Table 2-2.**

Table 2-2 Local Sensitive Receptors

Direction	Land Use Description	Sensitive Receptor (and distance from site)
North	▪ Residential properties ▪ Creative Garden Early Learning Centre	▪ Residents (immediately adjacent) ▪ Children (430 m north-east)
South	▪ Veno Street Reserve ▪ Residential properties	▪ Ecological receptors and recreational users (approximately 15 m south) ▪ Residence (approximately 30 m south-east)
East	▪ Residential properties	▪ Residents (immediately adjacent north-east)
West	▪ Residential properties ▪ Sydney Wildlife Nursery ▪ Heathcote Public School ▪ Heathcote Pre-School	▪ Residents (immediately adjacent) ▪ Ecological receptors (approximately 30 m west) ▪ Children (approximately 60 m south-west) ▪ Children (approximately 267 m south-west)

2.3. Regional Setting

The topography, (hydro)geology and soil landscape information is summarised in **Table 2-3**.

Table 2-3 Regional Setting Information

Attribute	Description
Topography	The site slopes to the north-west, with elevations ranging from approximately 193 mAHD (southern side of the site) to approximately 185 mAHD (northern side of the site adjacent Strickland Street) (Boxall, 2021).
Drainage	Likely to be consistent with the general slope of the site. Surface runoff is expected to be collected in stormwater pits and piped to the municipal drain system.
Geology	The Geological Survey of NSW Wollongong - Port Hacking 1:100,000 Geological Series Sheet 9029-9129, indicates the site is underlain by Hawkesbury Sandstone (more specifically, on a ridgeline between medium to coarse-grained quartz sandstone (with very minor shale and laminite lenses), and claystone, siltstone and laminate).
Soil Landscape	The NSW Government Department of Planning, Industry, and Environment *eSPADE v2.2* website indicates that the site overlies the *Faulconbridge – Residual Landscape (fb).* This landscape is characterised by level to gently undulating crests and ridges on plateau surfaces of Hawkesbury Sandstone. Local relief <20 m, slopes <5%. Infrequent rock outcrop and partially cleared eucalypt woodland.
Acid Sulfate Soil (ASS) Risk	The Sutherland Shire Acid Sulfate Soil Risk Map (1:25,000 scale; 2015), indicates the subject land lies within the map class description of *No Known Occurrence*. In such cases, acid sulfate soils (ASS) are not known or expected to occur and “land management activities are not likely to be affected by ASS materials”. As the site is underlain by sandstone, the potential for ASS presence on-site was considered to be low and further assessment or management is not deemed required.
Nearest Surface Water Features	Scout Gully (450 m south-west), Bottle Gully (900 m north-west), and Goburra Gully (915 m west) diverge towards Heathcote Creek, located approximately 1.2 km north-west of the site.

Attribute	Description
Groundwater Flow Direction	Groundwater flow direction in the area was inferred to be north-west towards Bottle Gully and ultimately Heathcote Creek.

2.4. Site Inspection

Observations were recorded during a site walkover, conducted on 17 October 2023 and 6 June 2024. Relevant observations are summarised below, with photographs taken during the inspection presented in **Appendix E**. Site features are noted in **Figure 2**, **Appendix A**.

- The site was occupied and operated by the Heathcote Hotel, at the time of inspection.
- The site is an irregularly shaped block of land. The Heathcote Hotel building predominately covers the western-central section of the site, and is comprised of a main restaurant and bar section, 'Bottle Mart' liquor store, and the residential hotel section on the northern wing. The northern, eastern, and southern sides of the hotel are occupied by on-grade parking areas.
- The site was observed to be sloping to the north-west.
- Evidence of an underground storage tank (UST) was observed in the central-western portion of the site, including:
    - One dip/fill point, which was observed to still have a suspected petroleum product within the piping.
    - Tank vent pipes within an adjacent room, which potentially lead into other areas of the building.
    - A Ground Penetrating Radar (GPR) scan estimated the UST to be approximately 1.8m x 1.6m x 1.0 mBGL (see **Appendix K**). Underground piping infrastructure was identified during the service locating.
- The building structure appeared to be in fair condition, with some significant paint flaking and deterioration observed to the building materials.
- Asphalt road surfaces covered the car parking area, which was observed to be in fair condition, with some potholes and cracks evident throughout.
- Drainage pits were noted within the car parking areas and adjacent to the building.
- Vegetation was present on the site within the car parking area, including large trees, grasses and weeds. The vegetation did not appear to be distressed, indicating that phytotoxicity is not currently an issue for local soils.
- No olfactory indicator of contamination (i.e. suspicious odour) was detected within any of the soil samples examined.
- No significant presence of anthropogenic building material (e.g. bricks, tiles, ACM) was observed within any of the soil samples.

3. PREVIOUS INVESTIGATIONS

The following environmental investigation report was reviewed as part of this investigation:

- EI (2023) *Preliminary Site Investigation / Limited Sampling, 1 Veno Street, Heathcote NSW*, Report Ref. E26160.E01_Rev0, dated 17 November 2023.

Key findings from this report are summarised in **Table 3-1**.

Table 3-1 Summary of Previous Reports

Assessment	**Findings**
Preliminary Site Investigation / Limited Sampling (EI, 2023)	
Purpose	To provide a qualitative assessment of the environmental conditions of the site, by appraising the potential for site contamination on the basis of field observations, historical land uses, documentary evidence, and limited intrusive assessment (soil and groundwater).
Scope of works	▪ Review of available site history, including aerial photographs, land title records, geological and acid sulfate soil risk maps, council and SafeWork NSW records, a Lotsearch report, and NSW EPA online databases. ▪ A site inspection. ▪ Intrusive soil investigation at 10 test borehole locations (BH1 to BH10). ▪ Installation of three groundwater wells (BH2M, BH7M, BH10M). ▪ Completion of one groundwater monitoring event (GME) from the newly installed monitoring wells.
Key Findings	▪ Based on the available historical information, the site was likely used for residential and agricultural purposes from 1916 to the early 1960s. In the early 1960s the Heathcote Hotel was constructed and has been in commercial use until the present day. The current site layout has not significantly changed since. ▪ A database search of the site reported that a commercial dry cleaner was situated up-gradient approximately 75m south-west from 1983 to 1985. It was concluded that the dry cleaner is a low source of (migrating) contamination to the site, considering the small time-frame in which it was operational. ▪ Evidence of an underground storage tank (UST) was observed in the central-western portion of the site, which included one dip/fill point and tank vents. The UST dip/fill point was observed to still contain petroleum liquid. ▪ A SafeWork NSW Dangerous Goods Register Records search was completed. A response from SafeWork NSW reported that no relevant records were found pertaining to the site. ▪ No olfactory indicator of contamination (i.e. suspicious odour) was detected within any of the examined soil samples. Soil sampling and analysis was conducted at 10 borehole locations (BH1-BH10): ‣ Sub-surface conditions were generalised as a layer of silty clay and clayey sand filling (0.1-0.6m thickness), overlying natural (residual) clays (0.4-2.1m thickness) and sandstone bedrock. The potential for ASS to be present on the site was considered low.

Assessment	Findings
	‣ All soil samples complied with the adopted NEPC (2013) human health investigation levels (HIL-B/HSL-D) and ecological investigation/screening levels (EIL/ESL). ‣ Asbestos was detected within shallow fill material in the form a 'friable mass' at BH107_0.3-0.4. ▪ Groundwater sampling and analysis was conducted at three newly installed monitoring wells: ‣ Standing water level (SWL) was recorded between 3.32 and 4,43 mBGL (RL 182.5 to 186.8 mAHD). The hydraulic gradient was inferred to be to the north-west, towards Bottle Gully and then Heathcote Creek ‣ An assessment against the ANZG *Marine Water Criteria* indicated concentrations of BTEX, VOCs, and phenols to be below the adopted criteria. Concentrations of metals (copper, nickel, and zinc) were reported above the adopted criteria. ‣ It was considered that the elevated metal concentrations in groundwater were representative of background conditions, ubiquitous in urbanised areas of Sydney.
Conclusions and Recommendations	It was concluded that the potential for site contamination may exist in areas of underground petroleum storage systems (UPSS), and asbestos identified in surface soils will require management. EI considered the site could be made suitable for the proposed development, subject to the following recommendations: A Remedial Action Plan (RAP) should be prepared, detailing the methodology and procedures required for effective site remediation. Additional site investigations were recommended: ‣ Ground penetrating radar (GPR) scan to more accurately determine the location and depth of the UST; ‣ Targeted intrusive sampling investigation in vicinity of UST to identify potential soil impacts, and on the south-eastern portion of the site to assist with delineating the asbestos hotspot; and ‣ Additional ground monitoring event (GME) from the three previously installed wells.

4. CONCEPTUAL SITE MODEL

In accordance with NEPC (2013) *Schedule B2 - Guideline on Site Characterisation*, EI developed a conceptual site model (CSM) assessing plausible pollutant linkages between potential contamination sources, migration pathways and receptors. The CSM provides a framework for identifying data gaps in the existing site characterisation and future site assessments. Potential contamination sources, exposure pathways and receptors that were considered relevant for this assessment are summarised along with a qualitative assessment of the potential risks posed by complete exposure pathways.

4.1. Summary of Site History

Based on the previous investigations (**Section 3**), the site was likely used for residential and agricultural purposes from 1916 to the early 1960s. In the early 1960s the Heathcote Hotel was constructed and has been in commercial use until the present day. The current site layout has not significantly changed since.

An underground storage tank was observed on the western boundary. A GPR scan estimated the dimensions 1.8 m x 1.6 m and 1 mBGL.

Residential and commercial developments have significantly increased in the local area from the latter part of the 20th century.

4.2. Subsurface Conditions

The sub-surface conditions were described as a shallow layer of variable silty clay filling (likely cut-and-fill), overlying natural (residual) silty clay and (weathered) sandstone (**Section 7.1**). The potential for ASS to be present on the site was deemed low.

Based on the GME conducted on 26 October 2023, the groundwater elevation ranged between 182.5 and 186.8 mAHD, and the hydraulic gradient (potentiometric slope) was inferred to be to the north-west, towards Bottle Gully and then ultimately Heathcote Creek.

4.3. Potential Contamination Sources

The potential contamination sources were as follows:

- Hazardous building materials within current and former site structures (including asbestos-containing material (ACM), lead-based paints and metallic objects), as a result of historical demolitions and/or weathering;
- Application of pesticides around building (footing) perimeters;
- Potential leaking from the UST located in the central-western portion of the site;
- Leaks from vehicles in the parking area; and
- Off-site migration from up-gradient sources.

4.4. Potential Contaminants

The potential contaminants the sites were considered to be:

- Priority Metals (PM) - arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc;
- Total Recoverable Hydrocarbons (TRHs);
- The monocyclic aromatic hydrocarbons benzene, toluene, ethylbenzene, xylenes (BTEX);
- Polycyclic Aromatic Hydrocarbons (PAHs);
- Organochlorine and Organophosphorus Pesticides (OCPs / OPPs);
- Volatile Organic Compounds (VOCS);
- Chlorinated Volatile Organic Compounds (cVOCs);
- Light Non-Aqueous Phase Liquids (LNAPL);
- Phenols; and
- Asbestos.

4.5. Qualitative Risk Assessment

An assessment of the potential contamination risks for the site is outlined in **Table 4-1**.

Table 4-1 Assessment of Potential Contamination Risk

Potential Source	Impacted Medium	COPC	Risk of Contamination
Hazardous building materials	Building fabrics Near surface soil	PM (lead in particular) and asbestos	**Moderate** Given site history and the age of construction of the building, hazardous building materials may be present and weathering of such materials may impact near surface soils. Asbestos in the form of a 'friable mass' was identified at former borehole BH7M (EI, 2023).
Leakage from vehicles, UPSS infrastructure	Soil Groundwater	PM, TRH, BTEX, PAH, Phenols, VOCs, OCP/OPP, LNAPL	**Low-Moderate** Potential leaking of the UPSS infrastructure on the western side of the site. UST has not been decommissioned.
Off-site migration from neighbouring properties	Groundwater	PM, TRH, BTEX, PAH, VOC, cVOCs, Phenols, LNAPL	**Low** Migration of contaminants from former up-gradient (south-west) dry cleaner at 1335 Princes Highway, Heathcote is considered low due to its small operational time-frame (2 years). Migration of contaminants from cross-gradient petrol service stations is considered low due to local topography.
Application of pesticides	Near surface soil (building footing areas)	PM (arsenic and copper), OCP and OPP	**Low** If present, pesticides are expected to be limited to shallow, building footprint soils.

4.6. Identified Receptors

The following potential receptors of site contamination were identified:

- Current and future site users / occupiers;
- On-site demolition / construction workers (during future redevelopment);
- Users of the adjacent land during future demolition / construction works;
- Future intrusive workers;
- Down-gradient ecological receptors;
- Local groundwater and (ultimately) Heathcote Creek.

Given the qualitative risk assessment summarised in **Section 4.5**, the risk to these receptors were considered to be low to moderate. Refer to **Table 4-2** for an overview of the preliminary CSM, identifying the potential contamination sources, exposure pathways and human and environmental receptors.

Table 4-2 Preliminary Conceptual Site Model

Potential Source	Impacted Media	Contaminants of Potential Concern	Transport mechanism	Exposure pathway	Potential receptor	Source-Pathway-Receptor (SPR) Linkage
Hazardous building materials (existing and previously demolished) Application of pesticides Leakage from vehicles and UPSS Migration from off-site upgradient sources (former dry cleaner)	Soil	PM, TRH, BTEX, PAH, OCP, OPP, and asbestos	Disturbance of surface and subsurface soils during site redevelopment, future site maintenance and future use of the site post redevelopment	Ingestion Dermal contact Inhalation of particulates	Current and future site users Demolition / construction workers Adjacent site users Future intrusive workers	**Potentially complete.** However, the use of personal protective equipment (PPE) is mandatory for construction workers.
			Atmospheric dispersion from soil to outdoor and indoor air spaces			
			Volatilisation of contamination from soil and diffusion to indoor air spaces.	Inhalation of vapours		
		PM, TRH, BTEX, PAH, OCP, OPP	Roots absorption of bioavailable compounds from impacted soils.	Biota uptake	Ecological receptors in areas of exposed soil/landscaping	**No.** All results were within the EIL/ESL criteria.
	Groundwater	PM, TRH, BTEX, PAH, VOCs and cVOCs	Volatilisation of contamination from groundwater to indoor or outdoor air spaces (onsite and offsite)	Inhalation of vapours	Current and future site users Demolition / construction workers Adjacent site users Future intrusive workers	**Potentially complete.** However, the use of personal protective equipment (PPE) is mandatory for construction workers.
			Disturbance of surface soils during site redevelopment, future site maintenance and future use of the site post redevelopment	Ingestion Dermal contact	Demolition / construction workers Future intrusive workers	
			Migration of dissolved phase impacts in groundwater via diffusion and advection	Biota uptake	Heathcote Creek	**Potentially complete.** Cadmium, copper, nickel, and zinc exceedances were reported. Groundwater was inferred to flow north-west towards Bottle Gully, which ultimately connects in to Heathcote Creek.

5. METHODOLOGY

5.1. Sampling, Analytical and Quality Plan

The sampling, analytical and quality plan (SAQP) ensures that the data collected during environmental works are representative and provided a robust basis for assessment decisions. The SAQP for this investigation included the following:

- Data quality objectives (DQOs), including a summary of the objectives of this investigation;
- Investigation methodology, including the media to be sampled, details of analytes and parameters to be monitored and a description of the rationale for intended sampling points;
- Sampling procedures (including sample handling, preservation and storage);
- Field screening methods;
- Laboratory analysis methods; and
- Analytical quality assurance / quality control (QA/QC).

5.2. Data Quality Objectives

In accordance with the NEPC (2013) *Schedule B2 Guideline on Site Characterisation*, the USEPA (2006) *Data Quality Assessment* and NSW EPA (2017) *Guidelines for the NSW Site Auditor Scheme*, DQOs were developed by the EI investigation team, following the NEPM- / NSW EPA- endorsed, seven step process (**Table 5-1**). In doing so, the appropriate levels of data quantity and quality needed for the specific requirements of the project were established.

Table 5-1 Summary of Project Data Quality Objectives

DQO Step	Details
1. State the Problem Summarise the contamination problem that will require new environmental data, and identify the resources available to resolve the problem; develop a conceptual site model.	The site is designate for residential and commercial redevelopment (**Section 1.2**). The site was assessed against the NEPC (2013) land use setting of; residential with minimal opportunities for soil access. The site history review (**Section 3**) and CSM showed that there was potential for contamination. The site required a preliminary understanding involving a desktop study and limited intrusive investigation into the nature and degree of any soil and groundwater contamination; in support of the development application to Sutherland Shire Council and enable the developer to meet its obligations under State Environmental Planning Policy 2021 and the Co*ntaminated Land Management Act 1997*.
2. Identify the Goal of the Study (Identify the decisions) Identify the decisions that need to be made on the contamination problem and the new environmental data required to make them.	Based on the objectives outlined in **Section 1.3**, the decisions for this DSI concerned the following questions: ▪ Has the nature, extent and source of any soil and/or groundwater impacts onsite been defined? ▪ What impact do the local geological conditions have on the fate and transport of any contaminants that may be present? ▪ Does the level of impact coupled with the fate and transport of potential contaminants represent an unacceptable risk to identified human and/or environmental receptors on- or off- site? ▪ Does the collected data provide sufficient information to allow the selection and design of an appropriate remedial strategy, if necessary? ▪ If the data does not provide sufficient information, what data gaps require closure to enable the suitability of the site to be determined, or selection and design of an appropriate remedial strategy?
3. Identify Information Inputs (Identify inputs to decision) Identify the information needed to support any decision and specify which inputs require new environmental measurements.	Inputs to the decision making process included: ▪ The proposed development plans and land use; ▪ National and NSW EPA guidelines endorsed under the *NSW Contaminated Land Management Act 1997*; ▪ Observations obtained from an intrusive investigation in locations and to depths deemed appropriate for assessment purposes; and ▪ Laboratory analysis of selected samples for the COPCs. At the end of the DSI, a decision had to be made regarding whether the environmental conditions were suitable for the proposed redevelopment, or if additional assessment / remedial works were required to make the site suitable.
4. Define the Boundaries of the Study Specify the spatial and temporal aspects of the environmental media that the data must represent to support decision.	**Lateral** – The investigation was conducted within the cadastral boundaries of the site. **Vertical** – From the ground surface, down to the deepest depth of borehole drilling (BH2M, 9 mBGL (RL 176.81 mAHD)). **Temporal** – Results were valid on the day of data / sample collection and remain valid as long as no changes occur on site or contamination (if present) does not migrate on site or on to the site from off-site sources.
5. Develop the Analytic Approach (Develop a decision rule) To define the parameter of interest, specify the action level, and integrate previous DQO outputs into a single statement that describes a logical basis for choosing from alternative actions.	The decision rules for the investigation were: ▪ If the concentrations of contaminants in the soil and/or groundwater data exceed the adopted criteria, then assess the need to further investigate the extent of impacts onsite. Decision criteria for QA/QC measures are defined by the Data Quality Indicators (DQI) in **Table 5-2**.

DQO Step	Details
6. Specify Performance or Acceptance Criteria (Specify limits on decision errors) Specify the decision-maker's acceptable limits on decision errors, which are used to establish performance goals for limiting uncertainties in the data.	Specific limits for this project were in accordance with National and NSW EPA guidance, and appropriate indicators of data quality and standard procedures for field sampling and handling. This included the following points to quantify tolerable limits: ▪ The null hypothesis for the investigation was that the 95% Upper Confidence Limits (UCL) of the average concentration of contaminants of concern exceed relevant land use criteria across the site. ▪ Acceptance of site suitability was based on the probability that: ‣ The 95% UCL of the average concentration of the data set satisfied the given site criteria (thus, a limit on the decision error was 5% that a conclusive statement may be incorrect); ‣ The standard deviation of the data set was less than 50% of the relevant criteria; and ‣ No single result exceeded the criteria by 250% or more. ▪ Soil and groundwater concentrations for the potential chemicals that were below investigation criteria made or approved by the NSW EPA were treated as acceptable and indicative of suitability for the proposed land use(s). ▪ If contaminant concentrations exceeded the adopted criteria, further investigation was considered prudent. If no contamination was detected, no further action was required.
7. Develop the Detailed Plan for Obtaining Data (Optimise the design for obtaining data) Identify the most resource-effective sampling and analysis design for general data that are expected to satisfy the DQOs.	▪ In order to identify the most resource-effective sampling and analysis design and satisfy the DQOs: ▪ Soil sampling was conducted at an additional seven locations using a mixed systematic grid and targeted pattern across accessible parts of the site. This sampling was in continuation to the previous investigation (EI, 2023). ▪ An additional three locations were targeted adjacent to the previous borehole BH7M to delineate asbestos contamination. ▪ An upper soil profile sample was collected at each borehole location and tested for potential contaminants, to assess the conditions of the fill layer, and impacts from activities at ground level. ▪ Further discrete, natural samples were analysed for primary metals, TRH, BTEX and PAH. Samples were selected on field observations (including visual and olfactory evidence), giving consideration to the subsurface stratigraphy. ▪ One groundwater monitoring well was installed down-gradient of the UST to assess any groundwater impacts. ▪ A GME to be completed from three previously installed groundwater monitoring wells (BH2M, BH7M and BH10M), and one newly installed groundwater monitoring well (BH17M) with laboratory analysis of representative samples for potential contaminants. ▪ Review of the results was undertaken to determine if further sampling was warranted. During the DSI, written instructions were issued to guide field personnel in the required fieldwork activities. All field works were performed in accordance with NSW EPA guidelines and EI standard operating procedures (SOPs).

5.3. Data Quality Indicators

To ensure that the investigation data were of an acceptable quality, they were assessed against the quality indicators outlined in **Table 5-2**. Assessment of data quality is presented in **Section 6** and **Appendix I**.

Table 5-2 Data Quality Indicators

QA/QC Component	Data Quality Indicator(s)
Precision A quantitative measure of the variability (or reproducibility) of data	Data precision was assessed by reviewing the performance of blind field duplicate sample sets, through calculation of relative percentage differences (RPD). Precision was deemed acceptable if RPDs were found dominantly to be less than 30%. RPDs that exceeded this range were considered acceptable where: ▪ Results were less than 10 times the limits of reporting (LOR); ▪ Results were less than 20 times the LOR and the RPD was less than 50%; or ▪ Heterogeneous materials or volatile compounds were encountered.
Accuracy A quantitative measure of the closeness of reported data to the “true” value	Data accuracy was assessed through the analysis of: ▪ Split field duplicate sample sets; ▪ Field / method blanks, analysed for the analytes targeted in the primary samples; ▪ Matrix spike sample sets; and ▪ Laboratory control samples.
Representativeness The confidence (expressed qualitatively) that data are representative of each medium present onsite	To ensure the data produced by the laboratory were representative of conditions encountered in the field, the following measures were taken: ▪ Blank samples run in parallel with field samples, to confirm there were no unacceptable instances of laboratory artefacts; ▪ Review of RPDs for field and laboratory duplicates to provide an indication that the samples were generally homogeneous, with no unacceptable instances of significant sample matrix heterogeneities; and ▪ The appropriateness of collection methodologies, handling, storage and preservation techniques was assessed to ensure/confirm there was minimal opportunity for sample interference or degradation (i.e. volatile loss during transport due to incorrect preservation / transport methods).
Completeness A measure of the amount of useable data from a data collection activity	Analytical data sets were considered complete upon confirmation that: SOPs for sampling protocols were adhered to; and All chain of custody (COC) documentation was properly completed. It could then be determined whether the generated data were sufficient for the purposes of the land use assessment.
Comparability The confidence that data are equivalent for each sampling event	Given that several data sets from separate sampling episodes were required, issues of comparability were reduced through adherence to SOPs and regulator-endorsed or published guidelines and standards on each data gathering activity. In addition the data were collected by experienced samplers and NATA-accredited laboratory methodologies will be employed.

5.4. Sampling Rationale

With reference to the CSM describe in **Section 3** and DQOs, the soil / groundwater sampling and analytical plans were in accordance with the following rationale:

- Multiple level (fill and natural) soil sampling at seven boreholes, located across accessible parts of the site in order to further characterise *in situ* materials. The number of boreholes in addition to the previous 10 boreholes (EI, 2023), was considered to provide a detailed overview of the potential contamination at the site in accordance with the NSW EPA Sampling Design Guidelines (2022).
- Delineation soil (fill) sampling at three boreholes in cardinal directions from the original BH7M location;
- Completion of a GME, utilising newly and previously installed monitoring wells (BH2M, BH7M, BH10M, and BH17M), to further characterise local groundwater conditions and any impacts from the previously identified UPSS; and
- Laboratory analysis of representative soil and groundwater samples for the potential contaminants.

5.5. Assessment Criteria

The assessment criteria adopted for this DSI were selected from available published guidelines that are endorsed by national or state regulatory authorities, with due consideration of the exposure scenario that is expected for the site, the likely exposure pathways, and the identified potential receptors. The adopted assessment criteria are outlined in **Table 5-3**.

For the purposes of this DSI, the adopted soil assessment criteria are referred to as the *Soil Investigation Levels* (SILs) and the adopted groundwater assessment criteria are referred to as *Groundwater Investigation Levels* (GILs).

Table 5-3 Adopted Investigation Levels for Soil and Groundwater

Medium	Guidelines	Rationale
Soil	NEPC (2013) HILs, HSLs, Management Limits	**Soil Health-based Investigation Levels (HILs)** NEPC (2013) *HIL-B* thresholds for residential with minimal access to soils. **Soil Health-based Screening Levels (HSLs)** NEPC (2013) *HSL-D* thresholds for vapour intrusion in low to high density residential (to assess potential human health impacts from residual vapours resulting from petroleum, BTEX and naphthalene). **Asbestos Health Based Screening Levels:** For asbestos in soil, the following criteria are applicable: ▪ No visible asbestos on soil surface in all areas of the site; ▪ Bonded ACM - HSL-A&B; ▪ Friable Asbestos: 0.001% w/w in all areas of the site; **Management Limits for Petroleum Hydrocarbons** Where the HSLs and ESLs for petroleum hydrocarbons were exceeded, sample results were also assessed against the NEPC (2013) *Management Limits* for the F1-F4 TRH fractions, to assess propensity for phase-separated hydrocarbons (PSH), fire and explosive hazards and adverse effects on buried infrastructure.

Medium	Guidelines	Rationale
	NEPC (2013) EILs, ESLs	**Ecological Investigation Levels (EILs) / Ecological Screening Levels (ESLs)** EILs/ESLs for commercial urban residential and open public spaces were adopted, to assess the potential impact to proposed landscaping areas, where plants could be exposed to soils and where precipitation may result in subsurface infiltration and resulting leaching of soil impacts to groundwater. EILs were calculated from Ecological Investigation Level Calculation Spreadsheet developed by CSIRO for the National Environment Protection Council for a high traffic NSW suburb and NEPC (2013) Schedule B1 Guideline on Investigation Levels for Soil by the addition of site specific Added Contaminant Limit (ACL) and the Ambient Background Concentration (ABC) for a high traffic NSW suburb. The adopted ESL criteria were based on fine grained criteria.
	CRC CARE (2017) high reliability ecological criteria	**High reliability ecological criterion for Benzo(α)pyrene** The CRC Care (2017) high reliability ecological guideline for benzo(α)pyrene in urban residential and public open space settings are not endorsed by NSW EPA. However, the criteria will be adopted as appropriate to assess for protection of terrestrial ecosystems.
Groundwater	ANZG (2018) GILs for Fresh Waters and NEPC (2013) Groundwater HSLs	**Groundwater Investigation Levels (GILs) for Fresh Waters** ANZG (2018) provides GILs for typical, slightly-moderately disturbed aquatic ecosystems, Trigger Values (TVs) for the 95% level of protection of aquatic ecosystems; however, the 99% TVs were applied for the bio-accumulative analytes. **Health-based Screening Levels (HSLs)** The NEPC (2013) groundwater *HSL-D* thresholds for vapour intrusion in commercial/industrial land settings were applied to assess potential human health impacts from residual vapours resulting from petroleum, BTEX and naphthalene impacts.

5.6. Soil Sampling Methodology

The soil sampling works conducted at the site are described in **Table 5-4**. Sampling locations are illustrated in **Figure 2**, **Appendix A**.

Table 5-4 Summary of Soil Sampling Methodology

Activity/Item	Details
Fieldwork	Initial PSI fieldwork was conducted on 17 October 2023 and comprised of 10 borehole locations across accessible parts of the site (EI, 2023). Additional DSI fieldwork was conducted on 6 June 2024, comprising a further 10 borehole locations across accessible parts of the site. Prior to drilling, locations were surveyed by a contracted services locator, with assistance from *Before-You-Dig* plans.
Drilling Method	Test bores BH7M-DL1 to BH7M-DL3 and BH1 to BH17M were drilled using a mechanical drilling rig, fitted with solid stem augers. The maximum drilling depth was 1.0 mBGL. Borehole logs are presented in **Appendix D**. Groundwater well bores were drilled using a track-mounted drill rig using solid flight augers equipped with a 'Tungsten-Carbide' (T-C)
Soil Logging	Drilled / examined soils were logged in the field in accordance with Australian Standard AS1726-2017. Soil was evaluated on a qualitative basis for visual and olfactory signs of contamination. Soil descriptions are included in the borehole logs (**Appendix D**).

Activity/Item	Details
Soil Sampling	Soil samples were collected by dry grab method from the augers (the sampler wearing dedicated nitrile gloves) and placed into laboratory-supplied, acid-washed, solvent-rinsed glass jars and zip-lock, plastic bags (the latter for asbestos samples). Blind and split field duplicates for QA assessment were prepared by collecting a bulk amount of soil and dividing (post mixing) into three separate glass jars.
Decontamination	Nitrile sampling gloves were replaced between each sampling location. The augers were cleaned of all residual soil between each borehole location by washing with a mixture of Alconox and potable water (1/20) until free of all residual materials, then rinsed with water.
Management of Soil Cuttings	Soil cuttings were used to backfill the completed boreholes.
Sample Preservation and Transport	Sealed sample containers were stored in an insulated chilled chest (with frozen ice packs), whilst on-site and in transit to the contracted laboratories. Chilled sample chests were transported to the primary laboratory (SGS Australia Pty Ltd (SGS)) using chain-of-custody (COC) procedures. Signed COC certificates and sample receipt advice (SRA) were provided by SGS for confirmation purposes (**Appendix G**). Split (inter-laboratory) soil field duplicates were submitted to Envirolab Services Pty Ltd (Envirolab; the secondary laboratory) under strict COC conditions. Signed COC certificates and SRA were provided by Envirolab for confirmation purposes (**Appendix G**).
Laboratory Analysis and Quality Control	Soil samples were analysed by SGS and Envirolab for the COPCs. All samples were analysed within the required holding period, as documented in the corresponding laboratory reports (**Appendix H** and **Appendix J**). In addition to the split (inter-laboratory) field duplicates (analysed by Envirolab), QC testing comprised one blind (intra-laboratory) field duplicate, an equipment rinsate blank, a laboratory-prepared trip spike soil sample and a laboratory-prepared trip blank soil sample.

5.7. Groundwater Sampling

The groundwater sampling works are described in **Table 5-5**. The monitoring well locations are illustrated in **Figure 2**, **Appendix A**.

Table 5-5 Summary of Groundwater Sampling Methodology

Activity/Item	Details
Fieldwork	Three groundwater monitoring wells (BH2M, BH7M, ad BH10M) were previously installed between 16 to 20 October 2023 (EI, 2023). An additional well (BH17M) was installed on 11 June 2024. A GME, involving water level gauging, well purging, field testing and groundwater sampling, was completed on 20 June 2024.
Well Construction	Well construction was in general accordance with the standards described in NUDLC (2020) and involved the following: ▪ Ø50mm, Class 18 uPVC, threaded, machine-slotted screen and casing; ▪ Base and top of each well was sealed with a uPVC cap; ▪ Annular, graded sand filter was used to approximately 300 mm above top of screen interval; ▪ Granular bentonite was applied above annular filter to seal the screened interval; and ▪ Surface completion comprised of a stick-up section of pipe, a plastic J-cap closing the well and a gatic cover at ground level. Well construction details are provided in **Table 7-3**.

Activity/Item	Details
Well Elevations	Top of casing elevations at each monitoring well were obtained using SparkFun RTK Express Tool. The RTK Express works with GIS software and SW Maps and is connected to tablets via Bluetooth.
Well Development	Well development was conducted immediately after installation. The development process involved the removal of water and accumulated sediment within the full length of the water column using a dedicated, high density polyethylene (HDPE), disposable bailer. Bailing was continued until no further reduction in suspended sediment was observed (i.e. after removal of several well volumes of water).
Well Gauging	Monitoring wells were gauged to determine SWL prior to groundwater purging and sampling. Gauging was conducted with a water/oil interface probe.
Well Purging, Field Testing and Sampling	Groundwater was purged and sampled by a low-flow / minimal draw-down method, using a peristaltic pump with dedicated tubing. During the purging process, water was continuously measured for field parameters (temperature (T), electrical conductivity (EC), reduction-oxidation potential (Redox), dissolved oxygen (DO) and pH) using a *Hanna Multi Parameter 9829* positioned within an open flow-through cell. Once water quality parameters stabilised (i.e. within ± 10% for DO, ± 3% for EC, ± 0.05 for pH, ± 0.2° for temperature and ± 20mV for redox), groundwater sampling was undertaken, by diverting the outlet of the pump (immediately before the flow cell) to the sampling vials and bottles. Refer to **Appendix F** for all field data sheets.
Decontamination Procedure	Sampling equipment (interface probe and water quality kit probes) were decontaminated between uses by washing in a solution of potable water and Decon 90, then rinsed with potable water. Decontamination was not required for the sampling pump, as dedicated disposable tubing was used for sampling at each individual well. Dedicated gloves were used for the collection of each sample.
Sample Containers and Preservation	Sample containers were supplied by the laboratory with the following preservatives: ▪ one, 1 litre amber glass, acid-washed and solvent-rinsed bottle; ▪ two, 40ml glass vials, pre-preserved with dilute hydrochloric acid, Teflon-sealed; and ▪ one, 250mL, HDPE bottle, pre-preserved with dilute nitric acid (1mL). Samples for metals analysis were field-filtered using 0.45 µm pore-size membranes. All containers were filled with sample to the brim then capped and stored in insulated chests (containing ice bricks), until completion of the fieldwork and during sample transit to the laboratory.
Sample Transport	After sampling, the ice brick filled chests were transported to SGS using strict COC procedures. SRA was provided by the laboratory to document sample condition upon receipt. Copies of the SRA and COC certificates are presented in **Appendix G**. A split (inter-laboratory) field duplicate was submitted to Envirolab under strict COC procedures. Signed COC certificates and sample receipt documentation were provided by Envirolab for contamination purposes (**Appendix G**).
Laboratory Analysis and Quality Control	Groundwater samples were analysed by SGS and Envirolab for the potential contaminants. All samples were analysed within the required holding period, as documented in the corresponding laboratory reports (**Appendix H**). In addition to the split (inter-laboratory) field duplicate (analysed by Envirolab), QC testing comprised a blind (intra-laboratory) field duplicate, an equipment rinsate blank, a laboratory-prepared, trip spike water sample and a laboratory-prepared, trip blank water sample, all tested by SGS.

6. DATA QUALITY ASSESSMENT

The assessment of data quality is defined as the scientific and statistical evaluation of environmental results to determine if they meet the objectives of the project (USEPA, 2006). For this DSI, data quality assessment involved an evaluation of the compliance of the field (sampling) and laboratory procedures with established protocols, as well as the accuracy and precision of the associated results from the quality control measures. The findings are summarised in **Table 6-1** and discussed in detail in **Appendix I**.

In summary, the overall quality of the analytical data from this DSI was considered to be of an acceptable standard for interpretive use and preparation of an updated CSM.

Table 6-1 Quality Assurance Process

Stage	Control	Conformance [Yes, Part, No]	Report Section(s)
Preliminaries	DQOs and DQIs established	Yes	See **Sections 5.2** and **5.3**
Fieldwork	Suitable documentation of fieldwork observations including borehole logs and field notes.	Yes	See **Appendix D** and **Appendix F**
Sampling Plan	Use of relevant and appropriate sampling plan (density, type, and location)	Yes	See **Section 5.4** for a preliminary overview
	All media sampled and duplicates collected	Yes	See **Appendix G**
	Use of approved and appropriate sampling methods	Yes	See **Sections 5.6** and **5.7**
	Selection of soil samples according to field PID readings (where VOCs are present)	No	N/A
	Preservation and storage of samples upon collection and during transport to laboratory	Yes	See **Sections 5.6** and **5.7**
	Appropriate field rinsate and trip blanks taken	Yes	See **Appendix G**
	Completed field and analytical laboratory sample COC procedures and documentation	Yes	See **Appendix G**
Laboratory	Sample holding times within acceptable limits	Yes	See **Appendices H, I, J**
	Use of appropriate analytical procedures and NATA-accredited laboratories	Yes	See **Appendices H, I, J**
	LOR low enough to meet adopted criteria	Yes	See **Appendices H, I, J**
	Laboratory blanks	Yes	See **Appendices H, I, J**
	Laboratory duplicates	Yes	See **Appendices H, I, J**
	Matrix spikes	Yes	See **Appendices H, I, J**
	Surrogates	Yes	See **Appendices H, I, J**
	Analytical results for replicated samples, including field and laboratory duplicates, expressed as RPD	Yes	See **Appendices H, I**
	Checking for the occurrence of apparently unusual or anomalous results (e.g. laboratory results that appear to be inconsistent with field observations or measurements)	Yes	See **Appendices B, D, H**
Reporting	Report reviewed by senior staff to assess project meets NSW EPA guidelines and objectives	Yes	See **Document Control**

7. RESULTS

7.1. Soil

Sub-Surface Conditions

Based on the borehole logs (and excluding any hardstand), the sub-surface conditions of the site were generalised as a layer of silty clay, clayey sand and gravelly sand filling (0.1m to 0.6m thickness), overlying natural (residual) silty clay, with (weathered) sandstone bedrock occurring at varying depths (0.4 to 2.1 mBGL). The potential for ASS to be present on the site was very low.

More details encountered during the soil investigation by EI are provided in **Table 7-1** and borehole logs are presented in **Appendix D**.

Table 7-1 Generalised Sub-Surface Profile

Layer	Description	Minimum - Maximum Depth (mBGL)
Hardstand	Asphalt	0.0 - 0.2
Fill	Silty CLAY; medium plasticity, brown / orange, with sub-angular to angular gravels.	0.1 - 0.6
	Gravelly SAND; fine to medium-grained, yellow / brown, with sub-angular to angular gravels	0.1 - 0.3
	Silty / Clayey SAND; low plasticity, brown / yellow, with bitumen and sub-angular to angular gravels	0.1 - 0.6
Natural	Silty CLAY; medium to high plasticity, brown / yellow / red / mottled white, with trace sub-angular to angular ironstone fragments	0.3 – 1.0
Bedrock	SANDSTONE; moderately weathered, yellow / brown	0.4 – 2.1
Groundwater	Based on groundwater levels from the three monitoring wells, groundwater was colourless to light brown, low turbidity, with slight oil/grease sheen.	2.19 – 4.53

Field Observations and PID Results

Soil samples were collected from the test bores at various depths to describe lithology summarised in **Table 7-1**. All examined soils were evaluated on a qualitative basis for odour and visual signs of contamination (e.g. hydrocarbon odours, oil staining, petrochemical filming, asbestos fragments, ash, and charcoal), with the following observations noted:

- No soil staining was observed in any of the examined soils.
- No fragments of potential ACM was observed in examined soil samples.
- No ash, slag, fibre cement sheeting or other foreign materials were observed in examined soil samples.
- No evidence of actual or potential ASSs was encountered in any of the examined soils.
- PID concentrations were low in all samples examined (maximum 0.4 ppm).

Laboratory Analytical Results

A summary of the DSI laboratory results for the analysed (representative) soil samples is presented in **Table 7-2**. More detailed tabulation is presented in **Table B.1**, **Appendix B**, which also includes the previous EI (2023) PSI results.

All results were found to comply with the adopted SILs applicable to the proposed land use settings, with the exception of asbestos identified in fill at BH7M.

Table 7-2 Summary of Soil Analytical Results

Number of Primary Samples	Analyte	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Samples Exceeding SILs
Priority Metals (total)				
30	Arsenic	2	12	None
30	Cadmium	<0.3	<0.3	None
30	Chromium	<0.5	89	None
30	Copper	<0.5	31	None
30	Lead	3	44	None
30	Mercury	<0.05	<0.05	None
30	Nickel	0.5	93	None
30	Zinc	2.1	85	None
PAHs				
30	Naphthalene	<0.1	0.1	None
30	Benzo(α)pyrene	<0.1	<0.1	None
30	Carcinogenic PAHs (as B(α)P TEQ)	<0.3	<0.3	None
30	Total PAHs	<0.8	<0.8	None
BTEX and TRHs				
30	Benzene	<0.1	<0.1	None
30	Toluene	<0.1	<0.1	None
30	Ethyl benzene	<0.1	<0.1	None
30	Total Xylenes	<0.3	<0.3	None
30	F1 – TRHs	<25	<25	None
30	F2 – TRHs	<25	<25	None
30	F3 – TRHs	<90	<90	None
30	F4 – TRHs	<120	<120	None
Pesticides				
20	Total OCPs	<1	<1	None
20	Total OPPs	<1.7	<1.7	None
PCB				
20	Total PCBs	<1	<1	None

Number of Primary Samples	Analyte	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Samples Exceeding SILs
Asbestos				
20	Asbestos	No Asbestos Detected	Asbestos Detected	▪ BH7_0.2-0.3 (friable mass)

7.2. Groundwater

Monitoring Well Construction

Three groundwater monitoring wells (labelled BH2M, BH7M, and BH10M) were installed in October 2023. A GME of these wells was undertaken on 26 October 2023 during the PSI (EI, 2023). An additional well (labelled BH17M) was installed in May 2024 to further characterise any potential groundwater impacts from the up-gradient UST.

A GME for all wells was undertaken on 20 June 2024 to further characterise local groundwater conditions. Location BH7M was inaccessible during the second GME, and was unable to be monitored. Construction details for the groundwater monitoring wells are summarised in **Table 7-3**. Monitoring well locations are shown in **Figure 2**, **Appendix A**.

Table 7-3 Monitoring Well Construction Details

Well	Well Depth (mBGL)	RL[1] (mAHD)	Well Stick-up / down[2] (m)	Screen Interval (mBGL)	Lithology Screened
BH2M	9.2	185.81	-0.1	1.2 - 9.2	Sandstone
BH7M	8.9	190.85	-0.1	5.9 - 8.9	Sandstone
BH10M	9.0	191.37	-0.1	6.0 - 9.0	Sandstone
BH17M	6.0	188.4	-0.1	3.0 - 6.0	Sandstone

Note 1 The relative level (RL; mAHD) corresponds to the ground surface at the well location, obtained using SparkFun RTK Express Tool
Note 2 Well stick-up / down, + above ground, - below ground

Field Observations

Field data obtained during the GME are presented in **Table 7-4**. Field data sheets are attached in **Appendix F**. Samples were evaluated on the basis of odour and visual signs of contamination, with the following observations noted:

26 October 2023 (BH2M, BH7M, and BH10M):

- Groundwater was found to be colourless to light brown, with low turbidity;
- A hydrocarbon odour was detected in BH10M; and
- Slight oil/grease sheen was observed on the sampled groundwater in BH2M and BH10M.

The collected physiochemical parameters presented in **Table 7-4** indicated that the groundwater was mildly acidic (pH ranging between 5.32 and 5.49), oxygenated (DO ranging between 1.59 and 2.65 mg/L), fresh (EC lower than 521 µS/cm)[1] and oxidising (Redox ranging between 197.6 and 309.7 mV). Groundwater flow was inferred to be north-west, towards Bottle Gully and Heathcote Creek, and consistent with the surface topography.

20 June 2023 (BH2M, BH10M, and BH17M):

- Groundwater was found to be colourless, with low turbidity;
- No odours or sheens were noted.

The collected physiochemical parameters presented in **Table 7-4** indicated that the groundwater was mildly acidic (pH ranging between 4.81 and 6.22), oxygenated (DO ranging between 1.79 and 4.85 mg/L), fresh (EC ranging between 296 and 495 µS/cm)[1] and oxidising (Redox ranging between 238.3 and 320.7 mV). Similarly to the GME on 26 October 2023, groundwater flow was inferred to be north.

Table 7-4 Groundwater Field Data

Well	Date	DTW[1] (mBTOC[2])	DTW[1] (mBGL)	SWL[3] (estimated mAHD)	DO (mg/L)	pH	EC (µS/cm)	Temp (°C)	Redox[4] (mV)
BH2M	26/10/2023	3.23	3.33	182.5	1.59	5.61	272	20.38	197.6
BH7M		2.09	2.19	188.7	2.42	5.49	521	18.19	309.7
BH10M		4.43	4.53	186.8	2.65	5.32	408	18.54	286.5
BH2M	20/06/2024	3.18	3.28	182.53	1.79	6.22	296	20.31	238.3
BH10M		4.10	4.20	187.17	4.85	5.52	411	21.13	297.9
BH17M		3.40	4.50	183.90	3.25	4.81	495	19.42	320.7

Note 1 DTW: Depth to Water
Note 2 MBTOC: metres below top of casing
Note 3 SWL: Standing water level, calculated as SWL (mAHD) = RL (mAHD) – DTW (mBGL)
Note 4 Redox readings were adjusted to the Standard Hydrogen Electrode by adding 205mV to the field electrode potential

Laboratory Analytical Results

A summary of the laboratory analytical results for the groundwater samples is presented in **Table 7-5**. More detailed tabulation is presented in **Table B.2**, **Appendix B**, which includes the EI (2023) PSI results.

All results were found to comply with the adopted GILs, with the exception of dissolved cadmium, copper, nickel, and zinc.

Table 7-5 Summary of Groundwater Analytical Results

Number of Primary Samples	Analyte	Minimum Concentration (µg/L)	Maximum Concentration (µg/L)	Sample(s) Exceeding GILs
Priority Metals (total dissolved)				
6	Arsenic	<1	4	None
6	Cadmium	<0.1	0.5	ANZG (2018) 0.2 µg/L ▪ BH17M-1 (0.5 µg/L)
6	Chromium	<1	1	None
6	Copper	1	5	ANZG (2018) 1.4 µg/L ▪ BH10M-1 (2 µg/L) ▪ BH2M-2 (2 µg/L) ▪ BH10M-2 (5 µg/L) ▪ BH17M-1 (4 µg/L)

Number of Primary Samples	Analyte	Minimum Concentration (µg/L)	Maximum Concentration (µg/L)	Sample(s) Exceeding GILs
6	Lead	<1	<1	None
6	Mercury	<0.1	<0.1	None
6	Nickel	2	13	ANZG (2018) 11 µg/L ▪ BH7M-1 (13 µg/L)
6	Zinc	<5	36	ANZG (2018) 8 µg/L ▪ BH7M-1 (15 µg/L) ▪ BH10M-1 (36 µg/L) ▪ BH17M-1 (17 µg/L)
PAHs				
6	Naphthalene	<0.1	<0.1	None
6	Benzo(α)pyrene	<0.1	<0.1	None
6	Total PAHs	<1	<1	None
BTEX and TRHs				
6	Benzene	<0.5	<0.5	None
6	Toluene	<0.5	1.2	None
6	Ethyl benzene	<0.5	<0.5	None
6	o-Xylene	<0.5	<0.5	None
6	m + p-Xylenes	<1	<1	None
6	F1 – TRHs	<50	<50	None
6	F2 – TRHs	<60	180	None
6	F3 – TRHs	<500	<500	None
6	F4 – TRHs	<500	<500	None
VOCs				
6	Carbon disulfide	<2	5	None
6	Chloroform	<0.5	3	None
6	Total VOCs	<10	<10	None
Total Phenols				
6	Total Phenols	<50	<50	None

Note 1 To obtain F1, subtract the sum of BTEX concentrations from the C_6-C_{10} fraction.
Note 2 To obtain F2, subtract Naphthalene from the >C_{10}-C_{16} fraction.
Note 3 F3 – (C_{16}-C_{34}).
Note 4 F4 – (C_{34}-C_{40}).

8. SITE CHARACTERISATION

8.1. Subsurface Conditions

Based on the borehole logs (**Appendix D**), the sub-surface conditions of the site were generalised as a layer of silty clay, clayey sand and gravelly sand filling (0.1m to 0.6m thickness), overlying natural (residual) silty clay, with (weathered) sandstone bedrock occurring at varying depths (0.4 to 2.1 mBGL).

8.2. Soil Impacts

Laboratory analytical results for the representative fill and natural soil samples were compared to adopted soil investigation levels.

Human Health

All boreholes were assessed against the adopted HIL-B / HSL-D criteria, with concentrations of potential contaminants reported below the human health criteria. . Results are summarised in **Table 7-2** and **Table B.1**, **Appendix B.**

Ecological

All boreholes within proposed/presumed landscaping areas outside of the proposed basement area were assessed against the adopted EIL/ESL criteria, with all concentrations of potential contaminants reported below the adopted ecological criteria. Results are summarised in **Table 7-2** and **Table B.1**, **Appendix B.**

8.3. Groundwater Impacts

GME - 26 October 2023 (EI, 2023)

Based on the GME conducted on 26 October 2023 (EI, 2023), the groundwater elevation ranged between 182.5 and 188.7 mAHD, and the hydraulic gradient (potentiometric slope) was inferred to be to the north-west, towards Bottle Gully and Heathcote Creek. Local groundwater conditions were mildly acidic, oxygenated, fresh and oxidising. A slight oil/grease sheen was observed within the sampled groundwater.

Reported concentrations of potential contaminants from the initial GME were generally below the adopted ANZG (2018) criteria, with the exception of metals copper, nickel, and zinc.

GME - 20 June 2024

The GME of BH2M, BH10M, and newly installed well BH17M was conducted on 20 June 2024, and identified similar local groundwater conditions (mildly acidic, oxygenated, fresh and oxidising), however no oil/grease sheen was noted. Groundwater elevations ranged between 182.53 and 187.17 mAHD, and the hydraulic gradient was inferred to be to the north.

The GME reported concentrations to exceed the adopted ANZG (2018) criteria for cadmium, copper and zinc. A minor detection above the laboratory practical quantitation limit for TRH-F2 was reported in BH2M (180 µg/L). Groundwater results are summarised in **Table 7-4**, **Table 7-5** and **Table B.2**, **Appendix B.** Groundwater exceedances are presented in **Figure 3**, **Appendix A**.

Local soils were not considered to be the source of metal or TRH impacts, given the low concentrations reported in representative (fill and natural) soil samples. Elevated metal concentrations in groundwater are common in disturbed urbanised areas of Sydney, and it was considered that the reported concentrations of cadmium, copper, nickel, and zinc were representative of urban background groundwater conditions, as opposed to site-specific impacts.

The detection of TRH-F2 in groundwater at BH2M was likely attributed to surface pavement runoff, and was considered to pose a low risk to future site users, and down-gradient ecological receptors. Further, there were no reported impacts in BH17M, which was installed down-gradient of the previously identified UST. Therefore, the risk of potential groundwater contamination from the UST is considered low.

8.4. Asbestos Risk

ACM in the form of a 'fibrous mass' was previously detected within the sample BH7_0.2-0.3 (EI, 2023). Delineation fill samples (BH7M-DL1 to BH7M-DL3) and all other samples reported no asbestos detected. Further, the remainder of samples across the site did not contain anthropogenic materials that could allude to the presence of ACM. It is therefore considered that there is a low risk of widespread asbestos contamination at the site, and the contamination is likely limited to an isolated hotspot (BH7M). The presence of ACM beneath the asphalt car park will require management as part of site remedial works.

8.5. Underground Storage Tank

A single UST was identified in the central-western portion of the site during the site walkover inspection. The UST was observed to still be in operation, with suspected petroleum liquid evident within the dip and fill point. Vent pipes were observed within the storage room adjacent to the area. Inferred locations of UPSS infrastructure are presented in **Figure 2** and **3, Appendix A**.

A GPR scan estimated the UST to be approximately 1.8 m x 1.6 m x 1 mBGL (see **Appendix K**). The integrity of the UST is unknown; however, reported groundwater concentrations in down-gradient monitoring well BH17M suggest a low risk of residual impact to groundwater.

Decommissioning of all UPSS infrastructure will need to be managed in accordance with the Underground Petroleum Storage Systems Regulation (POEO, 2019) and Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation (NSW EPA, 2020b) during further stages of works.

8.6. Limitations, Uncertainties and Data Gaps

On the basis of investigation findings, the CSM discussed in **Section 4** was considered to appropriately identify contamination sources, migration mechanisms and exposure pathways, as well as potential on and off-site receptors.

Previously known data gaps, as outlined in **Section 4.6** have largely been addressed; however the following data gaps should be addressed during future works:

- At the time of the fieldworks, the site was occupied, operational and substantially covered by either asphalt and concrete hardstands or buildings. Soil investigation was limited to samples collected from a mechanical drill rig auger.
- The spatial distribution of soil sampling locations was both systematic and targeted, though this was limited by existing infrastructure, as the site was still occupied and operational.

9. CONCLUSION

The property identified as 1 Veno Street, Heathcote NSW was the subject of a Detailed Site Investigation, conducted in order to assess the nature and degree of on-site contamination. The key findings of this DSI were as follows:

- The site comprised the Heathcote Hotel Inn and Bottle Mart liquor store, surrounded by on-grade parking areas.
- The building structures appeared to be in fair to good condition, with deterioration in the form of paint flaking and cracking of concrete and asphalt observed during the inspection.
- Evidence of an Underground Storage Tank (UST) was observed on the western side of the site which included one dip/fill point and tank vents. The UST dip/fill point was observed to still contain petroleum liquid (EI, 2023). Based on a Ground Penetrating Radar (GPR) scan, the UST is estimated to be 1.8m x 1.6m x 1.0 mBGL.
- Initial soil sampling and analysis was conducted on at 17 October 2023 and included 10 borehole locations (BH1-BH10M). Further detailed assessment was undertaken and included an additional seven borehole locations (BH11-BH17M). The intrusive soil assessment revealed the following:
    - The sub-surface conditions of the site were generalised as a layer of silty clay, clayey sand and gravelly sand filling (0.1m to 0.6m thickness), overlying natural (residual) silty clay, with (weathered) sandstone bedrock occurring at varying depths (0.4 to 2.1 mBGL).
    - An assessment of the soil concentrations against NEPC (2013) human health investigation levels (HIL-B/HSL-D) and ecological investigation/screening levels (EIL/ESL) indicated all samples meeting the adopted criteria.
- Asbestos-containing material (ACM) in the form of a 'fibrous mass' was previously detected within the sample BH7_0.2-0.3 (EI, 2023).
    - Delineation fill samples collected adjacent to BH7M (BH7M-DL1 to BH7M-DL3) reported no asbestos detected;
    - The remainder of samples collected across the site did not contain significant anthropogenic material that could allude to the presence of ACM;
    - It is considered that there is a low risk of widespread asbestos contamination at the site, asbestos contamination is likely limited to an isolated hotspot at location BH7M,
- Initial groundwater sampling and analysis was conducted at three monitoring well locations (BH2M, BH7M, and BH10M) on 26 October 2023 (EI, 2023). Further assessment was undertaken at BH2M, BH10M, and the recently installed well BH17M on 20 June 2024. The results of the groundwater assessments indicated:
    - Standing water level (SWL) was recorded between 2.19 and 4.53 metres below (existing) ground level (mBGL), and the elevation ranged between 182.5 and 188.7mAHD. The hydraulic gradient was inferred to be to the north-west, towards Bottle Gully and then Heathcote Creek. Local groundwater conditions were mildly acidic, oxygenated, fresh (low salinity) and oxidising.

- An assessment against the ANZG *Fresh Water Criteria* indicated concentrations of BTEX, VOCs, and phenols to be below the adopted criteria. Concentrations of metals (cadmium, copper, nickel, and zinc) were reported above the adopted ecological criteria. Metal concentrations in groundwater were considered to be representative of background conditions, and of low risk to future occupants and ecological receptors.
- There were no reported impacts in BH17M, which was installed down-gradient of the previously identified UST. The risk of potential groundwater contamination from the UST at the site is considered low.

Based on the findings of this DSI, and with consideration of EI's *Statement of Limitations* (**Section 11**), it was concluded that there is a low potential of widespread contamination to exist on-site. Isolated asbestos contamination at BH7M and the presence of UPSS infrastructure in the central-western portion of the site will require management and remediation in accordance with the appropriate guidelines. EI considers that the site can be made suitable for the proposed mixed-use commercial / residential development, provided that the recommendations described in **Section 10** are implemented.

10. RECOMMENDATIONS

EI provides the following recommendations in relation to any future redevelopment of the site:

- A Remedial Action Plan (RAP) should be prepared, detailing the methodology and procedures required for effective site remediation, including:
    - The management of asbestos-impacted soils at borehole location BH7M, and UPSS infrastructure in accordance with the Underground Petroleum Storage Systems Regulation (POEO, 2019), Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation (NSW EPA, 2020a), and Technical Note: Contamination assessment of service station sites (NSW EPA, 2023);
    - Waste classification assessment, in order to enable classification of surplus soils to be excavated and disposed off-site during remediation works and material imported to site, in accordance with the NSW EPA (2014) *Waste Classification Guidelines and Waste Regulations*;
    - Work health and safety considerations; and
    - Unexpected finds protocol to address any unforeseen contingencies that may arise.
- Before commencement of demolition works, a Hazardous Materials Survey (HMS) should be completed by a suitably qualified consultant, to confirm the presence/location of any hazardous materials within existing building fabrics.
    - All identified hazardous materials must be appropriately managed, to maintain worker health and safety during future demolition works and prevent the spread of hazardous substances onto the site (soil) surfaces.
    - An asbestos clearance inspection and certificate should be completed by a suitably qualified professional (SafeWork NSW Licensed Asbestos Assessor) following the removal of asbestos-containing materials if identified by the HMS.
    - Where clearance inspection indicates the presence of hazardous materials remaining on site, further removal and validation or further clearance inspection works must be undertaken.

11. STATEMENT OF LIMITATIONS

This report has been prepared for the exclusive use of Duffy Kennedy Constructions Pty Ltd, whom is the only intended beneficiary of EI's work. The scope of the investigation carried out for the purpose of this report was limited to that agreed with Duffy Kennedy Constructions Pty Ltd.

No other party should rely on this document without the prior written consent of EI, and EI undertakes no duty, or accepts any responsibility or liability, to any third party who purports to rely upon this document without EI's approval.

The findings presented in this report are the result of discrete and specific sampling methodologies used in accordance with best industry practices and standards. Due to the site-specific nature of soil sampling from point locations, it is considered likely that all variations in subsurface conditions across a site cannot be fully defined, no matter how comprehensive the field program.

While normal assessments of data reliability have been made, EI assumes no responsibility or liability for errors in any data obtained from regulatory agencies (e.g. Council, NSW EPA), statements from sources outside of EI, or developments resulting from situations outside the scope of works of this project.

Despite all reasonable care and diligence, the ground conditions encountered and concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. In addition, site characteristics may change at any time in response to variations in natural conditions, chemical reactions and other events (e.g. groundwater movement and or spillages of contaminating substances). These changes may occur subsequent to EI's investigation.

EI's assessment is necessarily based upon the results of the site investigation and the restricted program of surface and subsurface sampling, screening and chemical testing which was set out in the project proposal. Neither EI, nor any other reputable consultant, can provide unqualified warranties nor does EI assume any liability for site conditions not observed or accessible during the time of the investigations.

This report was prepared for Duffy Kennedy Constructions Pty Ltd and no responsibility is accepted for use of any part of this report in any other context or for any other purpose or by other third parties. This report does not purport to provide legal advice.

This report and associated documents remain the property of EI subject to payment of all fees due for this assessment. The report shall not be reproduced except in full and with prior written permission by EI.

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Abbreviations

ABC	Ambient Background Concentration
ACL	Added Contaminant Limit
ACM	Asbestos-Containing Materials
ASS	Acid Sulfate Soils
AST	Above-ground Storage Tanks
B(α)P	Benzo(α)Pyrene (a PAH compound)
BH	Borehole
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
CCO	Chemical Control Order
CLM	Contaminated Land Management
COC	Chain of Custody
CSM	Conceptual Site Model
CVOC	Chlorinated Volatile Organic Compounds (a sub-set of the VOC analysis suite)
DA	Development Application
DO	Dissolved Oxygen
DP	Deposited Plan
DQI	Data Quality Indicators
DQO	Data Quality Objectives
EC	Electrical Conductivity
EI	EI Australia
EIL	Ecological Investigation Level
EPA	Environment Protection Authority (of New South Wales)
ESL	Ecological Screening Level
F1	C_6-C_{10} TRH (less the sum of BTEX concentrations)
F2	>C_{10}-C_{16} TRH (less the concentration of naphthalene)
F3	>C_{16}-C_{34} TRH
F4	>C_{34}-C_{40} TRH
FCS	Fibre Cement Sheeting
FFL	Finished Floor Level
GIL	Groundwater Investigation Level
GME	Groundwater Monitoring Event
HDPE	High Density Polyethylene
HIL	Health-based Investigation Level
HSL	Health-based Screening Level
km	Kilometres
L	Litres
LGA	Local Government Area
LOR	Limit of Reporting (limit of reporting for respective laboratory method)
m	Metres
mAHD	meters Australian Height Datum
mBGL	meters Below Ground Level
µg/L	Micrograms per Litre
mg/L	Milligrams per Litre
mV	Millivolts
N/A	Not Applicable
NATA	National Association of Testing Authorities, Australia
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NSW	New South Wales
OCP	Organochlorine Pesticides

OPP	Organophosphate Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PFAS	Per- and Poly-Fluoroalkyl Substances
pH	Potential Hydrogen (a measure of the acidity or basicity of an aqueous solution)
PID	Photo-Ionisation Detector
PM	Priority Metals
POEO	Protection of the Environment Operations
PQL	Practical Quantitation Limit (limit of detection for respective laboratory method)
PSH	Phase-Separated Hydrocarbons
QA/QC	Quality Assurance / Quality Control
Redox	Reduction-Oxidation Potential
RPD	Relative Percentage Difference
SAQP	Sampling, Analytical and Quality Plan
SEPP	State Environmental Planning Policy
SIL	Soil Investigation Level
SOP	Standard Operating Procedure
SRA	Sample Receipt Advice (document confirming laboratory receipt of samples)
SWL	Standing Water Level
TEC	Threatened Ecological Communities
TEQ	Toxicity Equivalent Quotient
TRH	Total Recoverable Hydrocarbons (non-specific analysis of organic compounds)
TV	Trigger Value
UCL	Upper Confidence Limit (of the mean)
UPSS	Underground Petroleum Storage System
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compounds (specific organic compounds which are volatile)
WHSEP	Work, Health, Safety and Environment Plan

Appendix A – Figures

eiaustralia
Practical Solutions for Built Environments
Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph (02) 9516 0722 Fax (02) 9518 5088

Drawn:	S.N.
Approved:	J.H.
Date:	18/10/2023
Scale:	Not To Scale

Duffy Kennedy Constructions Pty Ltd
Detailed Site Investigation
1 Veno Street, Heathcote NSW
Site Locality Plan

Figure:
1

Project: E26160.E02_Rev0

LEGEND (All locations are Approximate)

- -	Site boundary
◐	Borehole locations (EI, 2023)
◐	Borehole locations
▼	Monitoring well locations
▬	Estimated UST Location (estimated dimensions 1.8m x 1.6m x 1 mBGL)
○	Location of tank dip and fill point
○	Location of tank vents

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Drawn:	S.N.
Approved:	J.H.
Date:	21-06-24

Duffy Kennedy Constructions
Detailed Site Investigation

1 Veno Street, Heathcote NSW
Borehole Location Plan

Figure:
2

Project: E26160.E02

Groundwater Exceedance	BH17M-1	ANZG (2018) criteria
Cadmium	0.5 μg/L	0.2 μg/L
Copper	4 μg/L	1.4 μg/L
Zinc	17 μg/L	8 μg/L

Groundwater Exceedance	BH10M-1 (EI, 2023)	BH10M-2	ANZG (2018) criteria
Copper	2 μg/L	5 μg/L	1.4 μg/L
Zinc	36 μg/L	-	8 μg/L

Soil Exceedance	BH7_0.2-0.3 (EI, 2023)
Asbestos	Present (fibrous mass)

Groundwater Exceedance	BH7M-1 (EI, 2023)	ANZG (2018) criteria
Nickel	13 μg/L	11 μg/L
Zinc	15 μg/L	8 μg/L

Map Source:Six Map; Imagery Date: 06-09-2023

LEGEND (All locations are Approximate)

— —	Site boundary
— —	Proposed basement boundary
▼	Monitoring well / borehole locations
▨	Estimated UST Location (estimated dimensions 1.8m x 1.6m x 1 mBGL)
🟦	= Exceedance of ANZG (2018) fresh water criteria
🟨	= Exceedance of HSL-A&B soil criteria

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Date:	21-06-24

Duffy Kennedy Constructions
Detailed Site Investigation

1 Veno Street, Heathcote NSW
Exceedance Plan

Figure:
3

Project: E26160.E02_Rev0

Appendix B – Tables

Table B.1 - Summary of Soil Analytical Results

Sample ID	Sampling Date	Metals									PAHs				BTEX				TRHs				Pesticides		PCBs	Asbestos
		As	Cd	Cr#	Cu	Pb	Hg	Ni	Ni TCLP	Zn	Carcinogenic PAHs (as B(α)P TEQ)	Benzo(α)pyrene	Total PAHs	Naphthalene	Benzene	Toluene	Ethylbenzene	Total Xylenes	F1	F2	F3	F4	OCPs	OPPs		Presence / absence
Fill soils																										
PSI (EI, 2023)																										
BH1_0.2-0.3	21/09/2023	6	<0.3	37	8.8	9	<0.05	30	NA	26	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH2_0.2-0.3		3	<0.3	88	27	6	<0.05	93	NA	60	<0.3	<0.1	<0.8	0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH3_0.3-0.4		2	<0.3	70	22	4	<0.05	78	NA	49	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH4_0.3-0.4		5	<0.3	36	13	44	<0.05	31	NA	85	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH5_0.3-0.4		5	<0.3	36	6.3	10	<0.05	26	NA	18	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH6_0.2-0.3		7	<0.3	26	1.7	11	<0.05	8.9	NA	10	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH7_0.2-0.3		4	<0.3	47	11	25	<0.05	40	NA	32	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Present
BH8_0.2-0.2		7	<0.3	35	2.8	5	<0.05	13	NA	8	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH9_0.1-0.2		4	<0.3	48	12	9	<0.05	48	NA	32	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH10_0.2-0.3		2	<0.3	14	3.1	3	<0.05	13	NA	7.7	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
DSI																										
BH11_0.2-0.3	5/06/2024	3	<0.3	51	12	3	<0.05	50	NA	31	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH12_0.1-0.2		3	<0.3	72	31	3	<0.05	73	0.030	47	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH13_0.1-0.2		5	<0.3	26	3.5	12	<0.05	17	NA	15	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH14_0.1-0.2		4	<0.3	55	14	10	<0.05	52	0.035	39	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH15_0.2-0.3		3	<0.3	46	12	7	<0.05	49	NA	35	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH16_0.2-0.3		6	<0.3	23	5.8	10	<0.05	16	NA	21	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH17_0.2-0.3		5	<0.3	22	2.9	12	<0.05	9.7	NA	9.7	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH17M_DL1_0.1-0.2		3	<0.3	77	26	5	<0.05	79	NA	47	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH17M_DL2_0.2-0.3		3	<0.3	89	23	6	<0.05	93	0.073	58	<0.3	<0.1	<0.8	0.2	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
BH17M_DL3_0.1-0.2		4	<0.3	45	12	7	<0.05	44	NA	29	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
Statistical Analysis																										
Minimum concentration		2	<0.3	14	1.7	3	<0.05	8.9	0.030	7.7	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Absent
Maximum concentration		7	<0.3	89	31	44	<0.05	93	0.073	85	<0.3	<0.1	<0.8	0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	Present
Residual soils																										
PSI (EI, 2023)																										
BH3_0.7-0.8	21/09/2023	12	<0.3	24	<0.5	10	<0.05	0.7	NA	6.4	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA
BH4_0.6-0.7		3	<0.3	11	<0.5	9	<0.05	1.4	NA	10	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA
BH5_0.8-0.9		5	<0.3	14	<0.5	13	<0.05	0.5	NA	2.8	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA
BH7_0.5-0.6		4	<0.3	30	<0.5	11	<0.05	1.6	NA	7.7	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA
BH10_0.5-0.6		3	<0.3	8	<0.5	12	<0.05	0.7	NA	2.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA
DSI																										
BH11_0.6-0.7	5/06/2024	5	<0.3	22	12	12	<0.05	0.9	NA	4.2	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA
BH13_0.5-0.7		5	<0.3	22	<0.5	10	<0.05	0.8	NA	3.5	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA
BH14_0.5-0.6		6	<0.3	13	15	14	<0.05	1.7	NA	13	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA
BH15_0.6-0.7		5	<0.3	21	<0.5	8	<0.05	0.8	NA	3.3	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA
BH17_0.5-0.6		10	<0.3	25	<0.5	13	<0.05	3.8	NA	4.3	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA
Statistical Analysis																										
Minimum concentration		3	<0.3	<0.5	<0.5	8	<0.05	0.5	NA	2.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NC
Maximum concentration		12	<0.3	30	15	14	<0.05	3.8	NA	13	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NC
NEPC (2013) Criteria																										
HIL B - Residential with minimal soil access		500	150	500 Cr(VI)	30,000	1,200	120	1,200		60,000	4	▨	400	▨	▨	▨	▨	▨	▨	▨	▨	▨	600	▨	1	▨
HSL D - *Commercial / Industrial* Soil texture classification – SAND		Source depths (0 m to <1 m. BGL)												NL	3	NL	NL	230	260	NL	▨	▨	▨	▨	▨	▨
		Source depths (1 m to <2 m. BGL)												NL	3	NL	NL	NL	370	NL	▨	▨	▨	▨	▨	▨
		Source depths (2 m to <4 m. BGL)												NL	3	NL	NL	NL	630	NL	▨	▨	▨	▨	▨	▨
		Source depths (4 m + BGL)												NL	3	NL	NL	NL	NL	NL	▨	▨	▨	▨	▨	▨
EILs / ESLs - *Urban residential and open public spaces* [2]		100	▨	640	240	1,100	▨	330		990	▨	33 [3]	▨	170	65	105	125	45	180	120	1,300	5,600	640	▨	▨	▨
Management Limits – *Residential, parkland and public open space* [1]		▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	700	1,000	2,500	10,000	▨	▨	▨	▨
Asbestos contamination *HSL - B Residential with minimal soil access* Bonded ACM (%w/w)		▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	0.04
Asbestos Contamination HSL Non Bonded / Friable Asbestos (%w/w)		▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	0.001

Notes:

🟨	Highlighted values exceed HIL / HSL
🟩	Highlight values exceed EIL/ESL criteria
🟧	Highlighted values exceed HIL/HSL and EIL/ESL criteria.

Results are recorded in mg/kg

HIL B	NEPC 1999 Amendment 2013 'HIL B' - Health based criteria for residential settings with minimal opportunities for soil access.
HSL D	NEPC 1999 Amendment 2013 'HSL D' Health Based Screening Levels applicable for vapour intrusion values applicable for commercial / industrial settings.
EIL	Ecological Investigation Level for urban residential and public open space land use.
ESL	Ecology Screening Level for urban residential and public open space land use.
#	Thresholds are for Chromium VI.
NA	Not Analysed
NC	Not calculated
1	As soils are predominantly clay, fine-grained soil assessment criteria values were applied.
2	EIL criteria is derived from calculated Added Contaminant Limit (ACL) averages (pH 8.6 / CEC 26.6) with the Ambient Background Concentration (ABC) for a high traffic NSW suburb.
3	The ecological criteria for benzo(α)pyrene was sourced from CRC Care (2017) Technical Report No. 39 Risk-based management and remediation guidance for benzo(a)pyrene.
4	Ecological citeria only applies to boreholes located within proposed/presumed deep soil zones (i.e. BH1, BH2M, BH5, BH6, and BH7M).
F1	To obtain F1 subtract the sum of BTEX concentrations from the C6-C10 fraction.
F2	To obtain F2 subtract naphthalene from the >C10-C16 fraction.
F3	(>C16-C34)
F4	(>C34-C40)
TCLP	Toxicity Characteristic Leachate Procedure. Results are recorded in mg/L

Table B.2 - Summary of Groundwater Analytical Results

Sample ID	Sampling Date	Metals								PAHs			BTEX					TRHs				Total Phenols	VOCS		
		As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	Total PAHs	Benzo(α)pyrene	Naphthalene	Benzene	Toluene	Ethylbenzene	o-xylene	m/p-xylene	F1	F2	F3	F4		Carbon disulfide	Chloroform (THM)	Total VOCs
Preliminary Site Investigation (EI, 2023)																									
BH2M-1	26/10/2023	4	<0.1	1	<1	<1	<0.1	2	6	<1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<50	<60	<500	<500	<50	<2	<0.5	<10
BH7M-1		<1	<0.1	<1	<1	<1	<0.1	13	15	<1	<0.1	<0.1	<0.5	1.2	<0.5	<0.5	<1	<50	<60	<500	<500	<50	<2	3	<10
BH10M-1		<1	<0.1	<1	2	<1	<0.1	5	36	<1	<0.1	<0.1	<0.5	0.8	<0.5	<0.5	<1	<50	<60	<500	<500	<50	5	2.4	<10
Detailed Site Investigation (EI, 2024)																									
BH2M-2	20/6/2024	1	<0.1	<1	2	<1	<0.1	<1	<5	<1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<50	180	<500	<500	<50	<2	<0.5	<10
BH10M-2		<1	0.1	<1	5	<1	<0.1	1	6	<1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<50	<60	<500	<500	<50	<2	<0.5	<10
BH17M-1		<1	0.5	<1	4	<1	<0.1	3	17	<1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<50	<60	<500	<500	<50	<2	<0.5	<10
GILs																									
HSL D - *Commercial / industrial* Soil texture classification – SAND		2m to <4m										NL	5,000	NL	NL	NL	NL	6,000	NL						
		4m to <8m										NL	5,000	NL	NL	NL	NL	6,000	NL						
		8m+										NL	5,000	NL	NL	NL	NL	7,000	NL						
ANZG (2018)	Fresh Waters [1]	24	0.2	3.3 (Cr III) 1.0 (Cr VI)	1.4	3.4	0.06 [3]	11	8 [3]		0.1 [3]	16	950	180 [4]	80 [4]	350	275 [4]						20	370	
NHMRC (2008)	Recreational [2]	100	20	500 (Cr VI)	1000	100	10	200	3000			16	950	180 [4]	80 [4]	350	275 [4]								

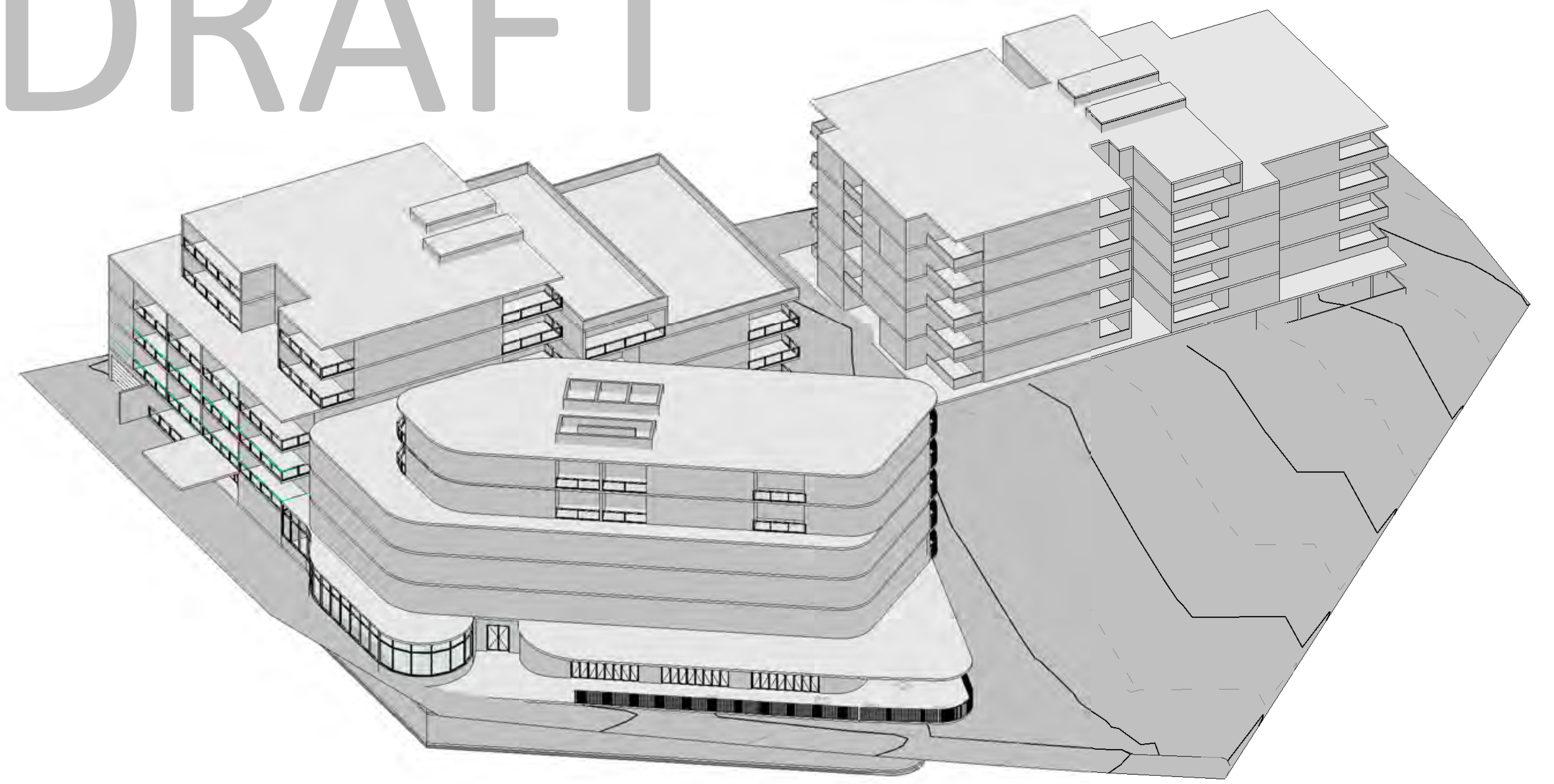
Notes:

🟨	Highlighted indicates criteria exceeded
🟦	Highlighted indicates criteria not met

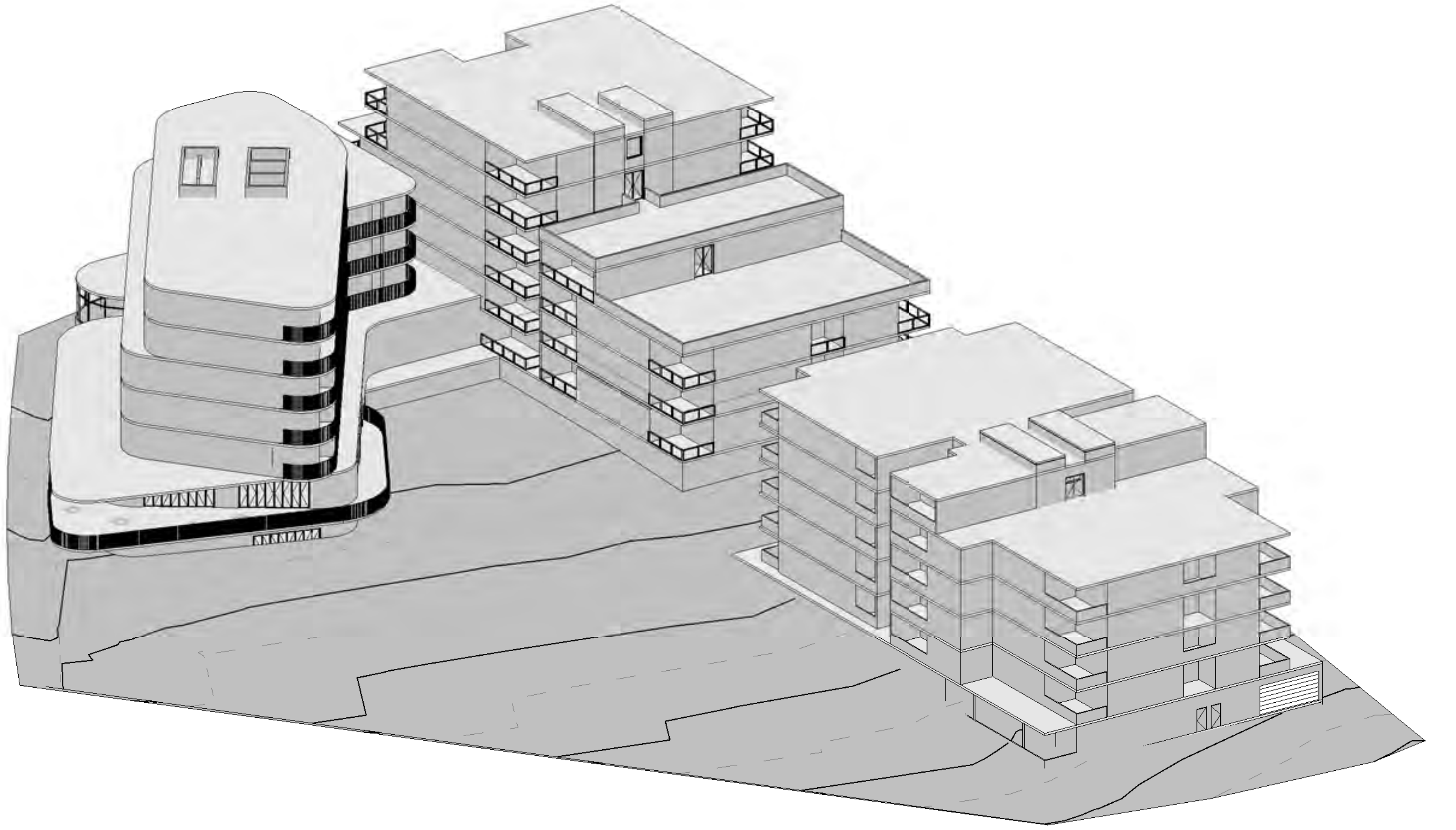
All values are µg/L unless stated otherwise

HSL D	NEPC 1999 Amendment 2013 'HSL D' Health Based Screening Levels for vapour intrusion applicable for commercial / industrial settings.
NL	Not Limiting
F1	To obtain F1 subtract the sum of BTEX concentrations from the C6-C10 fraction.
F2	To obtain F2 subtract naphthalene from the >C10-C16 fraction.
F3	(>C16-C34)
F4	(>C34-C40)
1	NEPM (2013) Groundwater Investigation Levels for fresh and marine water quality 95% protection level based on ANZECC & ARMCANZ (2000).
2	Based on NHMRC (2011 - update August 2018 v.3.5) Drinking Water Guidelines. The lowest of the Health Guideline x10 or the Aesthetic Guideline has been chosen as the assessment criteria. Aesthetic based criteria have been indicated by *
3	To account for the bioaccumulating nature of this toxicant, 99% species protection level DGV is used for slightly to moderately disturbed systems. Refer to Warne et al. (2017) for details.
4	Low reliability toxicity data, refer to ANZECC & ARMCANZ (2000)
5	Quality Control (QAQC) duplicates of BH2M

Appendix C – Proposed Development Plans



DRAWING LIST		
SHEET	DRAWING NAME	REV
0 - GENERAL		
DA-0-001	COVER SHEET	D
2 - PLANS		
DA-0-210	(S1) BASEMENT	D
DA-0-211	(S1) GROUND LEVEL & (S2) BASEMENT	D
DA-0-212	(S1) LEVEL 1 & (S2) LOWER GROUND	D
DA-0-213	(S1) LEVEL 2 & (S2) GROUND LEVEL	D
DA-0-214	(S1) LEVEL 3 & (S2) LEVEL 1	D
DA-0-215	(S1) LEVEL 4 & (S2) LEVEL 2	D
DA-0-216	(S1) LEVEL 5 & (S2) LEVEL 3	D
DA-0-217	(S1) ROOF & (S2) LEVEL 4-5	D
4 - SECTIONS		
DA-0-401	SECTION 1	D
9 - DIAGRAMS & SCHEDULES		
DA-0-901	GFA DIAGRAMS - STAGE 1	D
DA-0-904	GFA DIAGRAMS - STAGE 2	D
DA-0-951	SHADOW ANALYSIS	C



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Nominated Architects:
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Paul Oreshkin NSW ARB #7774

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REV	DESCRIPTION	DATE	ISSUED	CHECKED
A	ISSUE FOR REVIEW	25/08/2023	RM	ND
B	ISSUE FOR REVIEW	30/08/2023	RM	ND
C	ISSUE FOR REVIEW	22/09/2023	HS	PO
D	ISSUE FOR REVIEW	27/09/2023	HS	PO

PROJECT
MIXED USE DEVELOPMENT - OPTION 3
(SERVICED APARTMENTS)
1 VENO STREET, HEATHCOTE

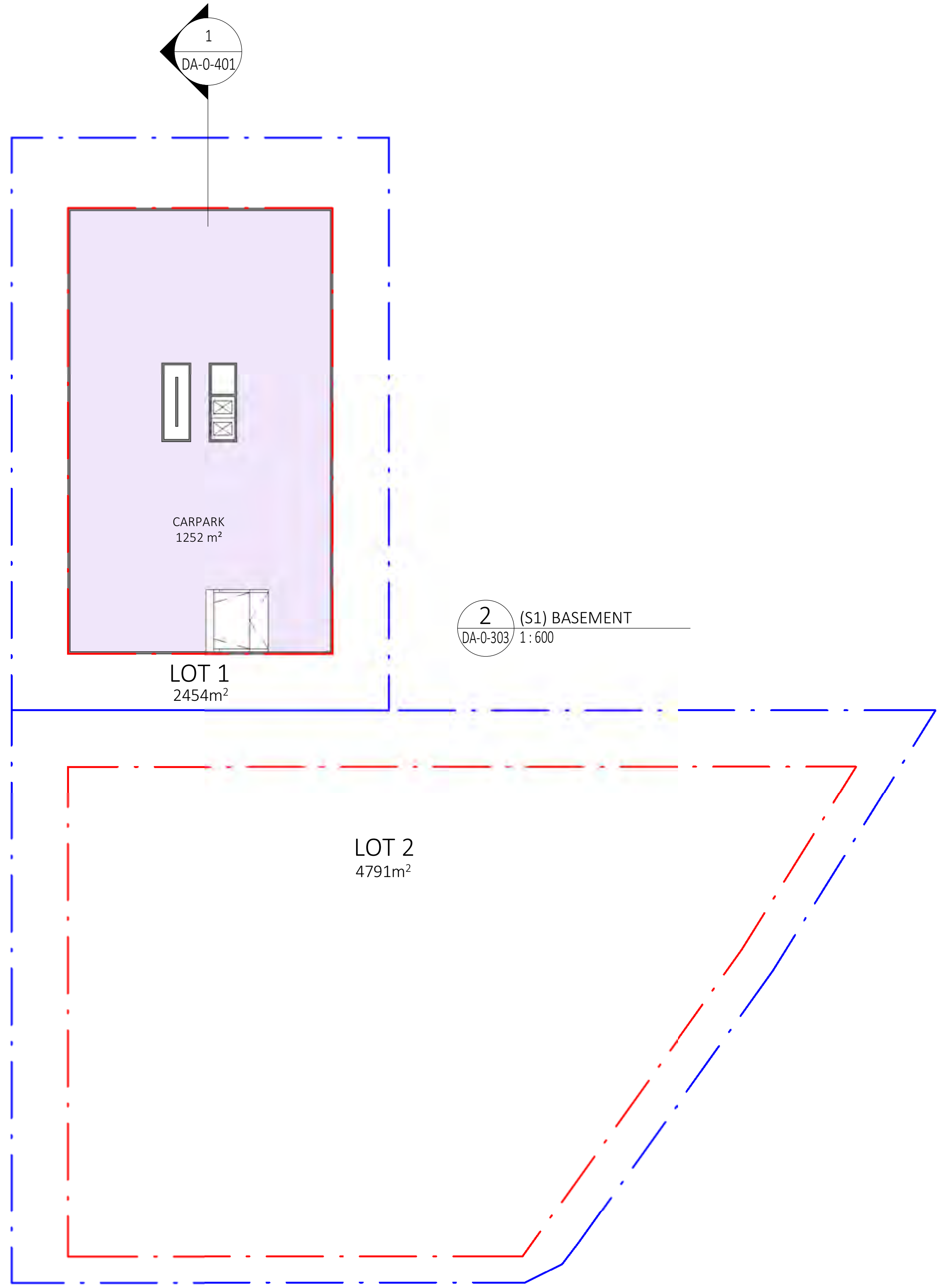
CLIENT
GAVIN DUFFY

FEASIBILITY STUDY
C:\Users\HShah\Documents\23-049-DA-0-R23-(CEN)_hshah8369Z.rvt

DRAWING
COVER SHEET

PROJECT NO.	DRAWING NO.	REVISION	DATE
23-049	DA-0-001	D	27/09/2023
NOT TO SCALE		DRAWN RM	AUTHORISED ND

PRINTED: 27/09/2023 5:01:06 PM



2 DA-0-303 (S1) BASEMENT
1 : 600

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Nominated Architects:
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Paul Oreshkin NSW ARB #7774

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REV	DESCRIPTION	DATE	ISSUED	CHECKED
A	ISSUE FOR REVIEW	25/08/2023	RM	ND
B	ISSUE FOR REVIEW	30/08/2023	RM	ND
C	ISSUE FOR REVIEW	22/09/2023	HS	PO
D	ISSUE FOR REVIEW	27/09/2023	HS	PO

PROJECT
MIXED USE DEVELOPMENT - OPTION 3
(SERVICED APARTMENTS)
1 VENO STREET, HEATHCOTE

CLIENT
GAVIN DUFFY

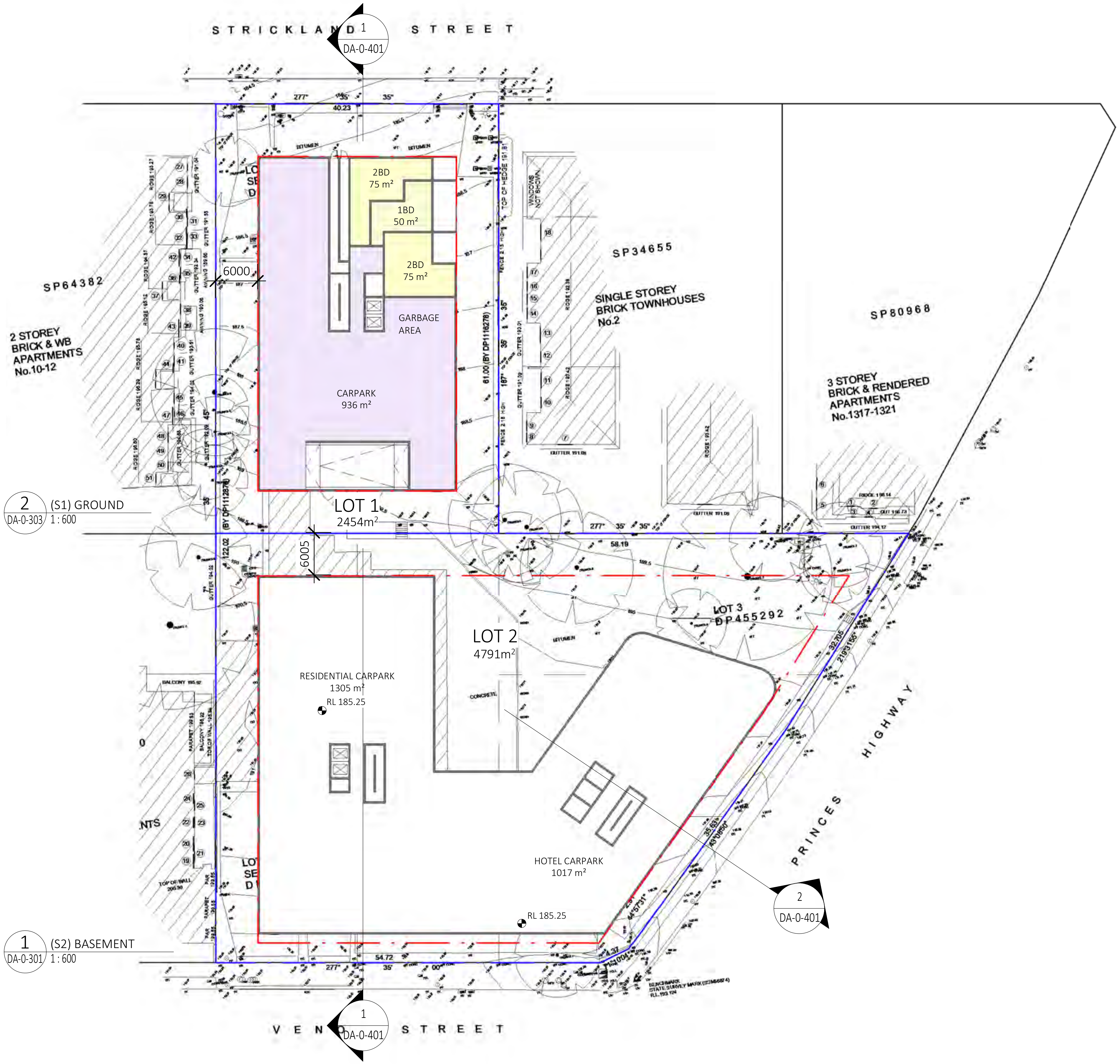
FEASIBILITY STUDY
C:\Users\HShah\Documents\23-049-DA-0-R23-(CEN)_hshah8369Z.rvt

DRAWING
(S1) BASEMENT

PROJECT NO.	DRAWING NO.	REVISION	DATE
23-049	DA-0-210	D	27/09/2023

SCALE @ A3	DRAWN	AUTHORISED
1 : 600	RM	ND

PRINTED: 27/09/2023 5:01:06 PM



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REV	DESCRIPTION	DATE	ISSUED	CHECKED
A	ISSUE FOR REVIEW	25/08/2023	RM	ND
B	ISSUE FOR REVIEW	30/08/2023	RM	ND
C	ISSUE FOR REVIEW	22/09/2023	HS	PO
D	ISSUE FOR REVIEW	27/09/2023	HS	PO

PROJECT
MIXED USE DEVELOPMENT - OPTION 3
(SERVICED APARTMENTS)
1 VENO STREET, HEATHCOTE

CLIENT
GAVIN DUFFY

FEASIBILITY STUDY
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DRAWING
(S1) GROUND LEVEL & (S2)
BASEMENT

PROJECT NO.	DRAWING NO.	REVISION	DATE
23-049	DA-0-211	D	27/09/2023

SCALE @ A3	DRAWN	AUTHORISED
1 : 600	RM	ND

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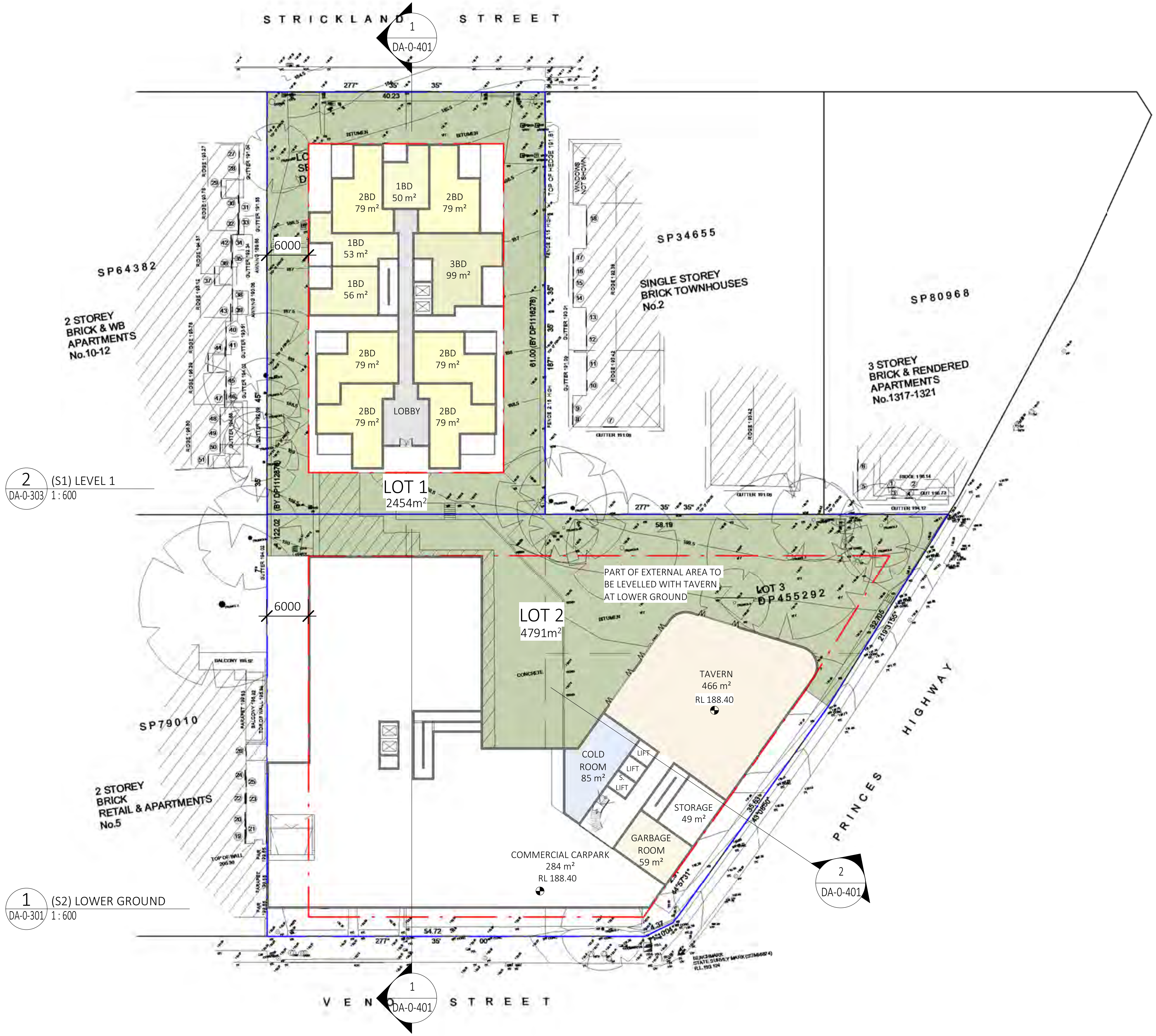

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Phone: +61 2 8540 8720

Nominated Architects:
Robert Nigel Dickson NSW ARB #5364
Paul Oreshkin NSW ARB #7774

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A	ISSUE FOR REVIEW	25/08/2023	RM	ND
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PROJECT
MIXED USE DEVELOPMENT - OPTION 3
(SERVICED APARTMENTS)
1 VENO STREET, HEATHCOTE

CLIENT
GAVIN DUFFY

FEASIBILITY STUDY
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DRAWING
(S1) LEVEL 1 & (S2) LOWER GROUND

PROJECT NO.	DRAWING NO.	REVISION	DATE
23-049	DA-0-212	D	27/09/2023

SCALE @ A3	DRAWN	AUTHORISED
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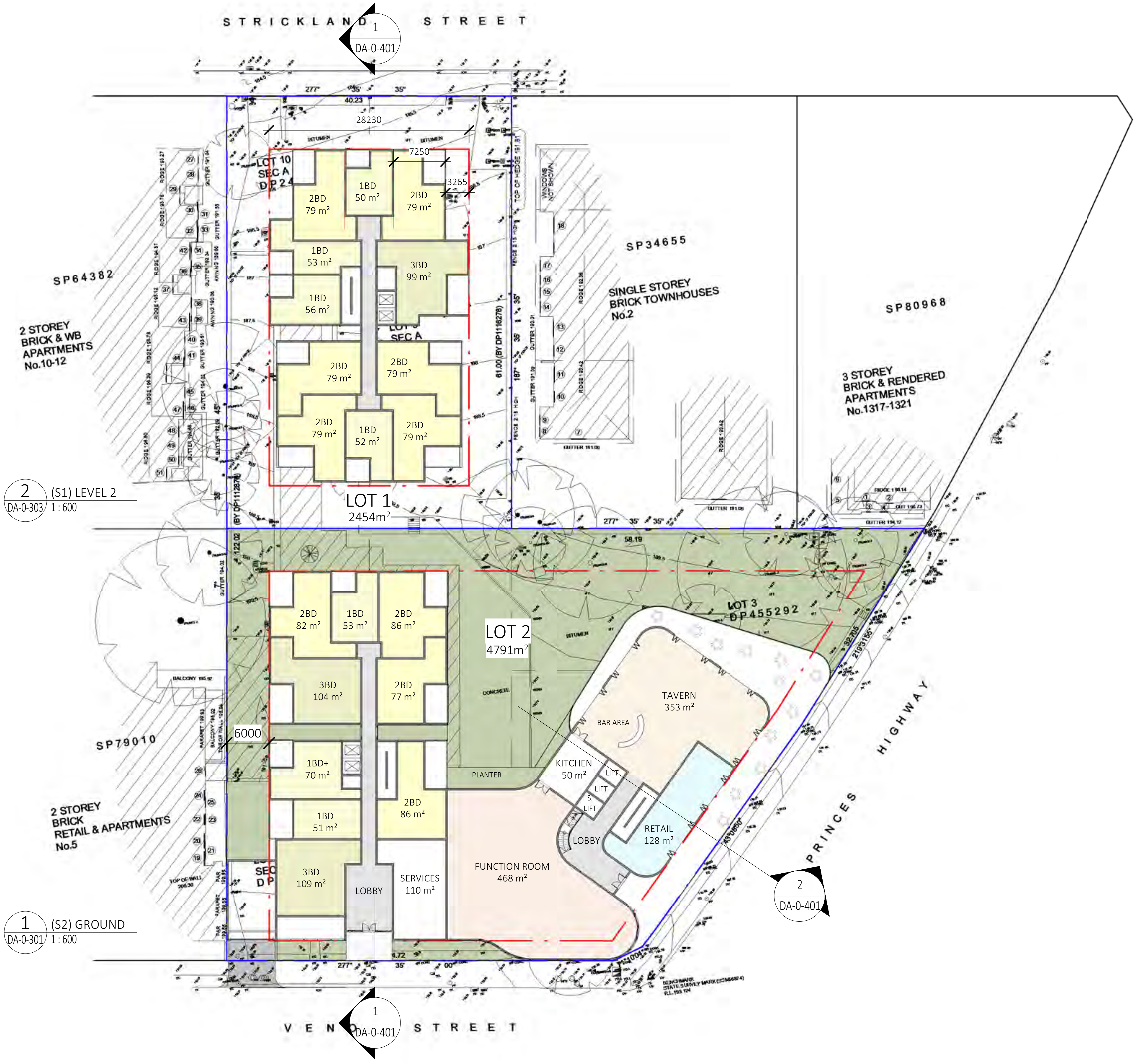

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PROJECT
MIXED USE DEVELOPMENT - OPTION 3
(SERVICED APARTMENTS)
1 VENO STREET, HEATHCOTE

CLIENT
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DRAWING
(S1) LEVEL 2 & (S2) GROUND LEVEL

PROJECT NO.	DRAWING NO.	REVISION	DATE
23-049	DA-0-213	D	27/09/2023

SCALE @ A3	DRAWN	AUTHORISED
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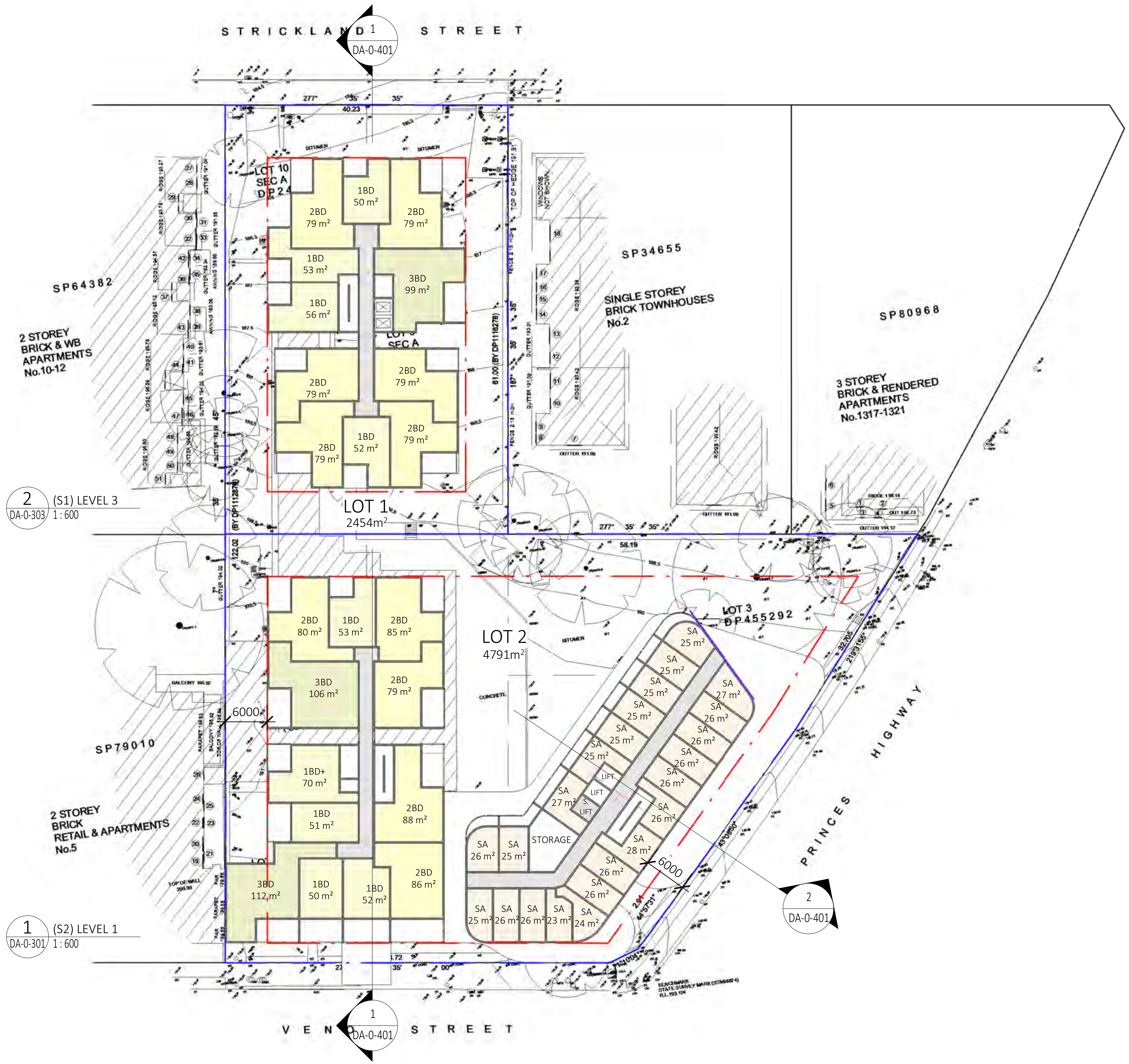

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(SERVICED APARTMENTS)
1 VENO STREET, HEATHCOTE

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DRAWING
(S1) LEVEL 3 & (S2) LEVEL 1

PROJECT NO.	DRAWING NO.	REVISION	DATE
23-049	DA-0-214	D	27/09/2023

SCALE @ A3	DRAWN	AUTHORISED
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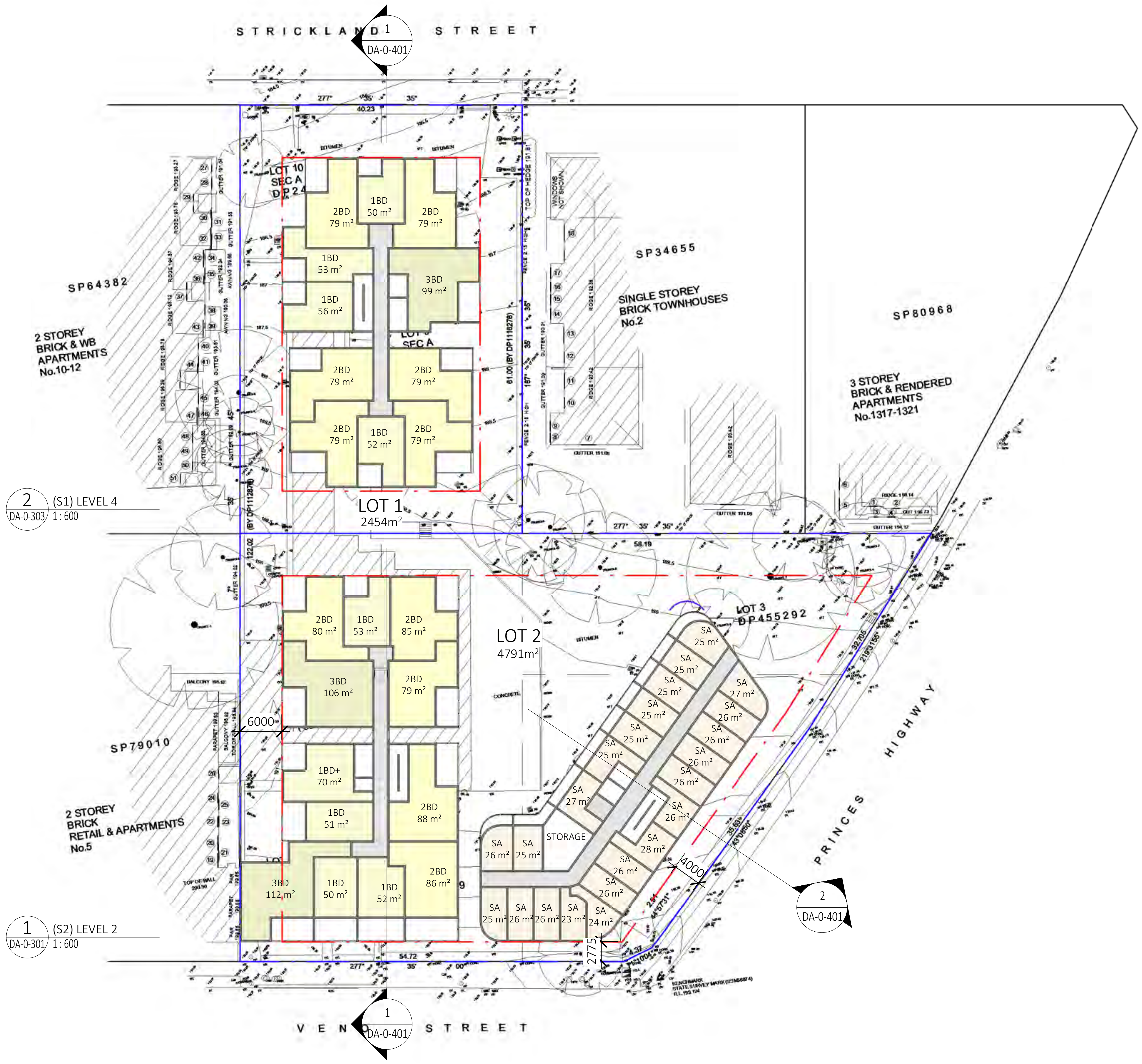

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N

PROJECT
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(SERVICED APARTMENTS)
1 VENO STREET, HEATHCOTE

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DRAWING
(S1) LEVEL 4 & (S2) LEVEL 2

PROJECT NO.	DRAWING NO.	REVISION	DATE
23-049	DA-0-215	D	27/09/2023

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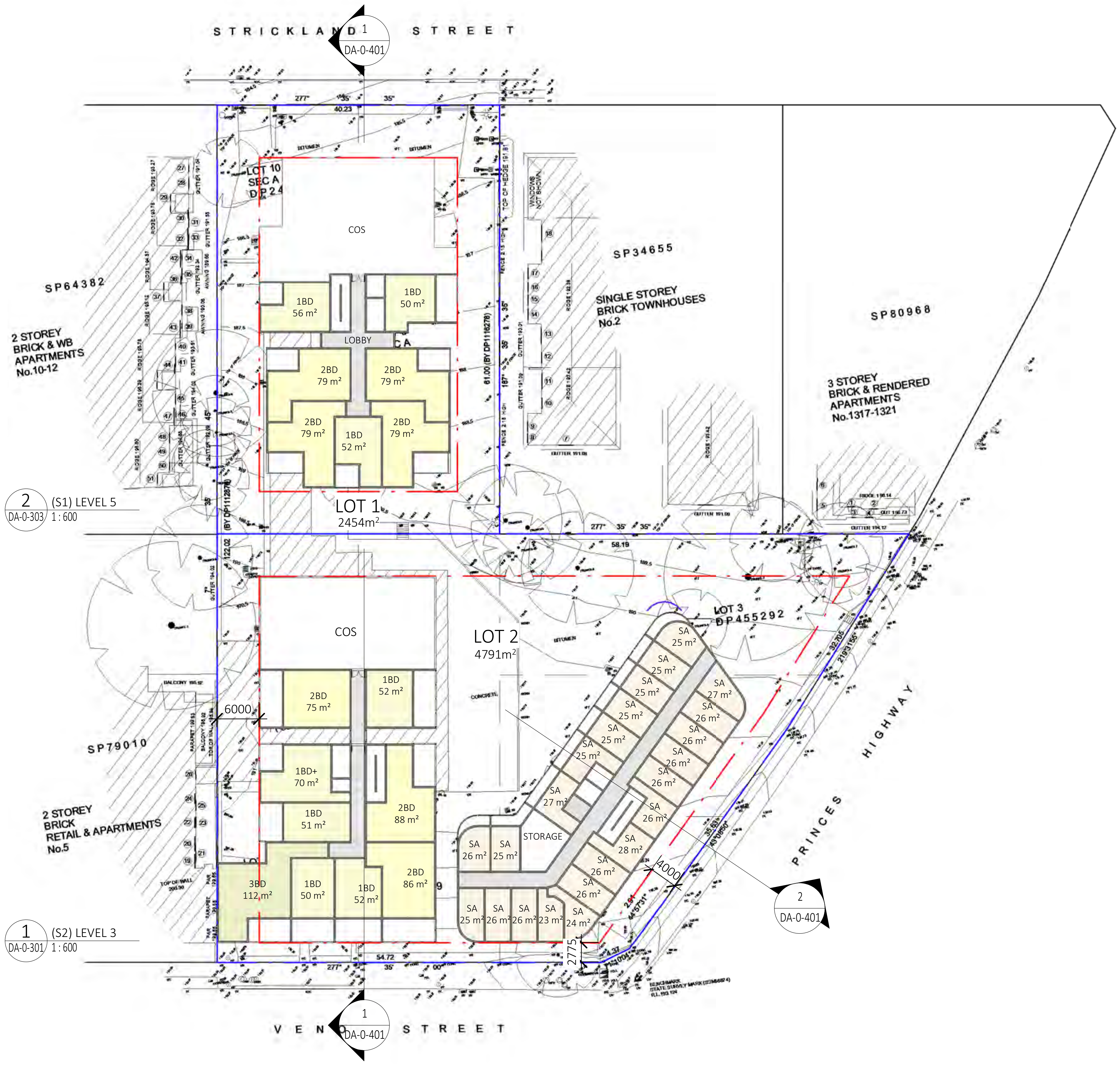

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(SERVICED APARTMENTS)
1 VENO STREET, HEATHCOTE

CLIENT
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DRAWING
(S1) LEVEL 5 & (S2) LEVEL 3

PROJECT NO.	DRAWING NO.	REVISION	DATE
23-049	DA-0-216	D	27/09/2023

SCALE @ A3	DRAWN	AUTHORISED
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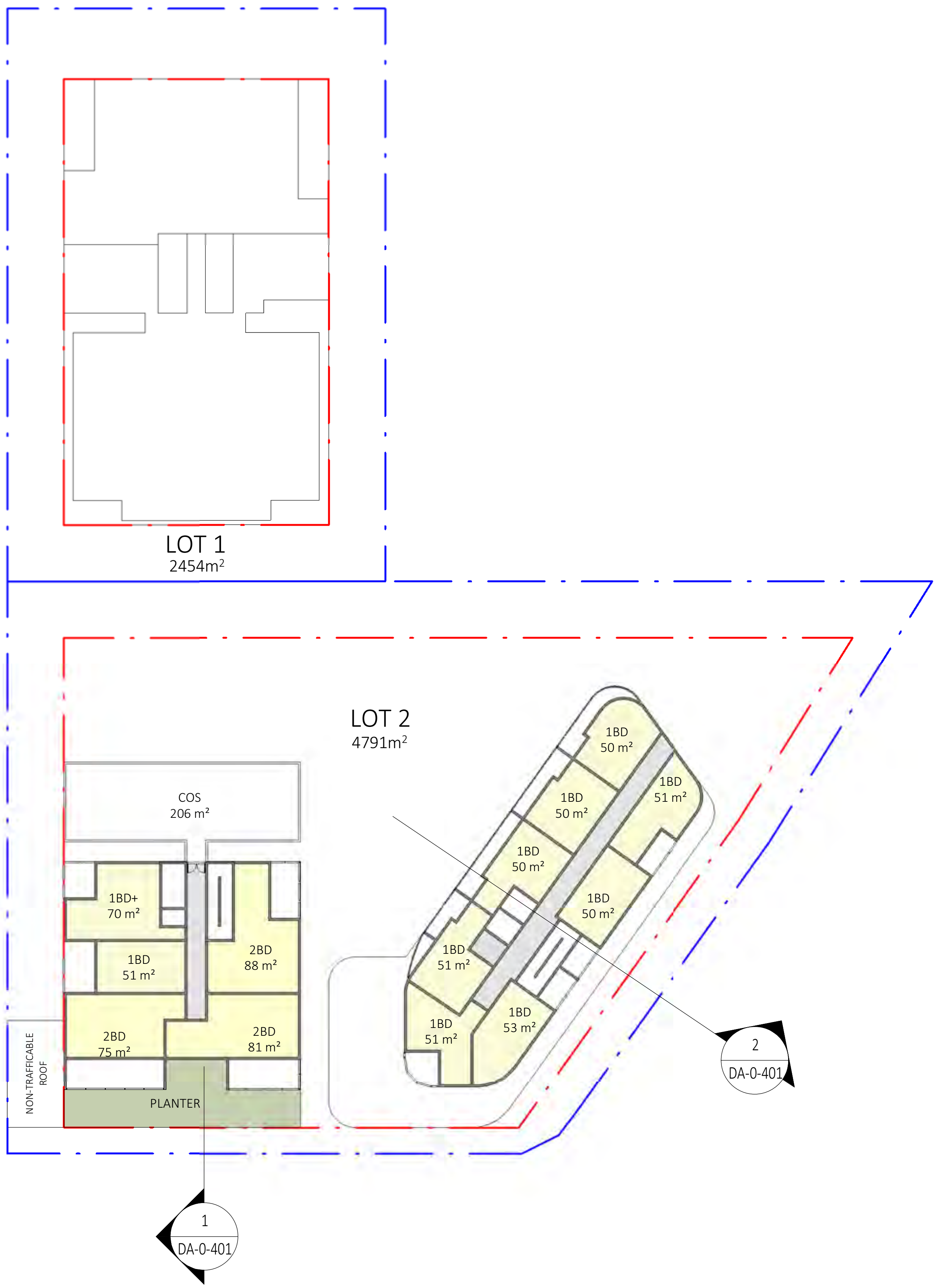

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DRAWING
(S1) ROOF & (S2) LEVEL 4-5

PROJECT NO.	DRAWING NO.	REVISION	DATE
23-049	DA-0-217	D	27/09/2023

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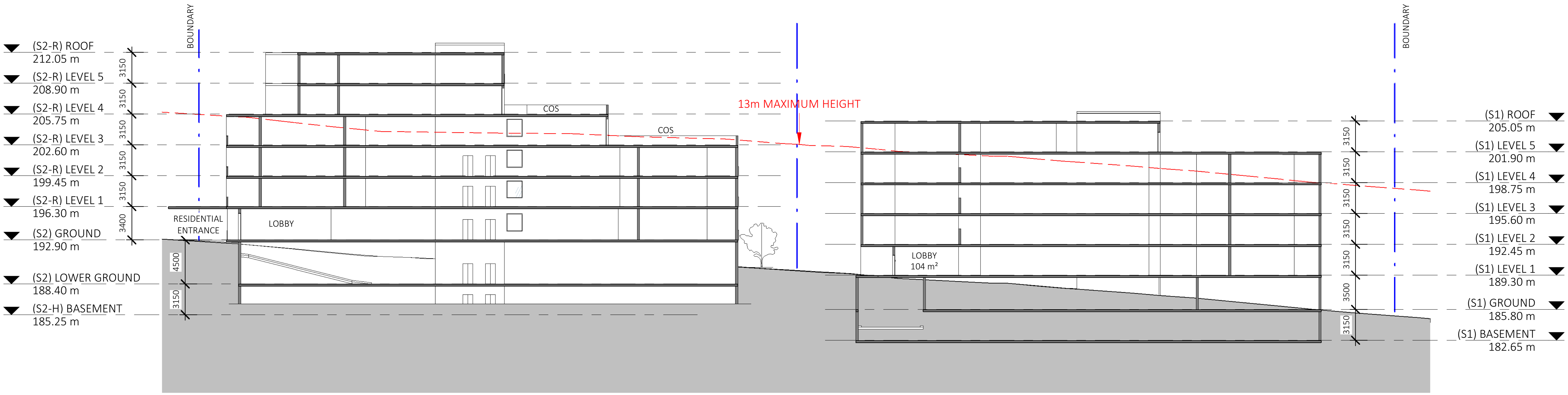

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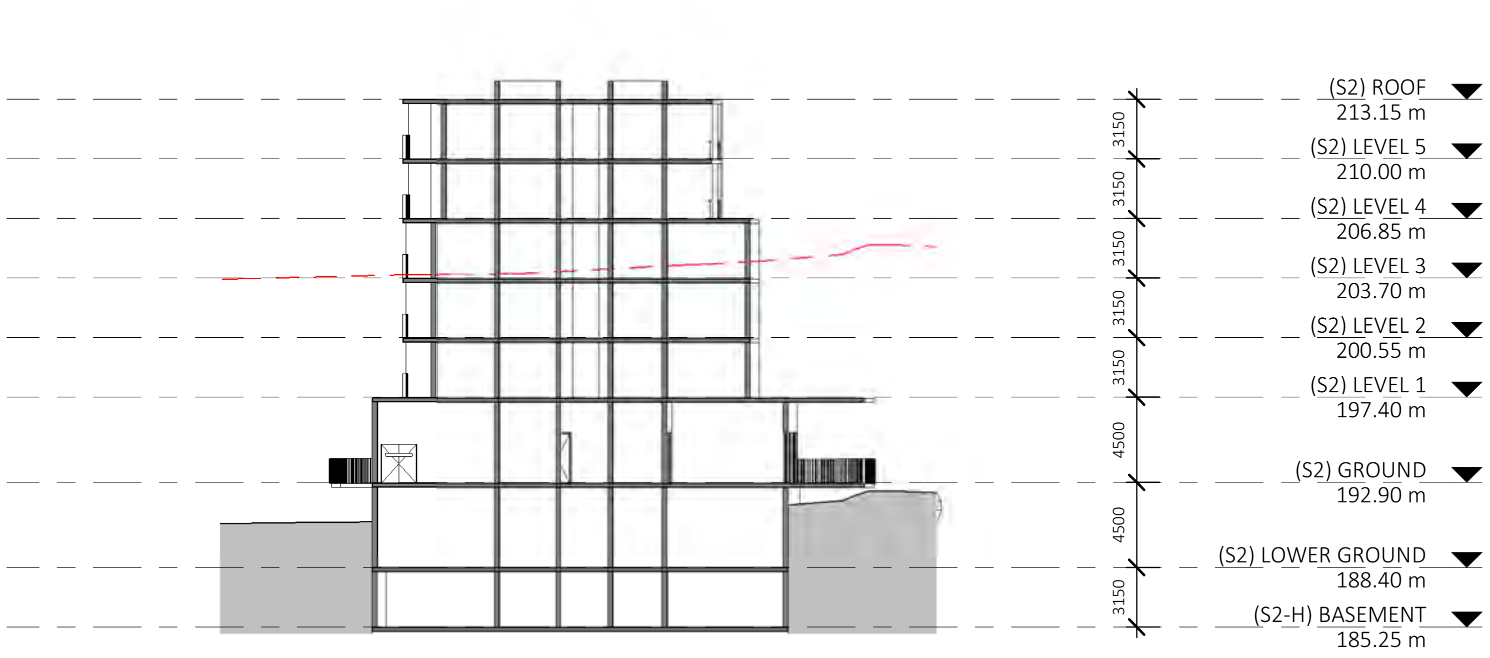

2 SECTION 2
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PROJECT
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(SERVICED APARTMENTS)
1 VENO STREET, HEATHCOTE

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DRAWING
SECTION 1

PROJECT NO.	DRAWING NO.	REVISION	DATE
23-049	DA-0-401	D	27/09/2023

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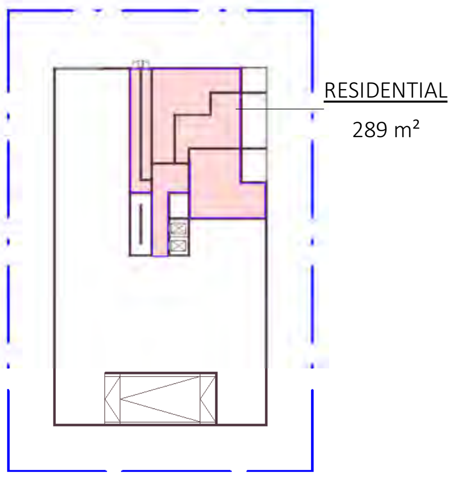
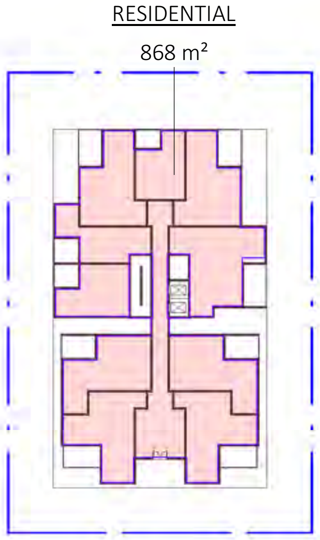
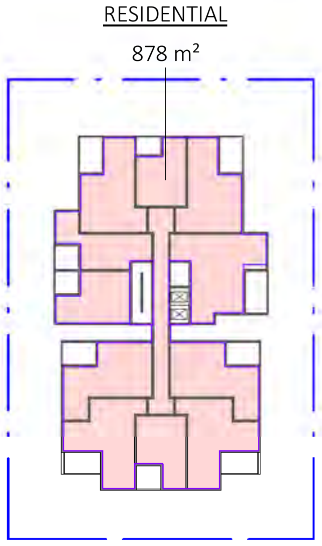


1 (S1) GROUND
DA-0-303 1 : 1000



2 (S1) LEVEL 1
DA-0-303 1 : 1000



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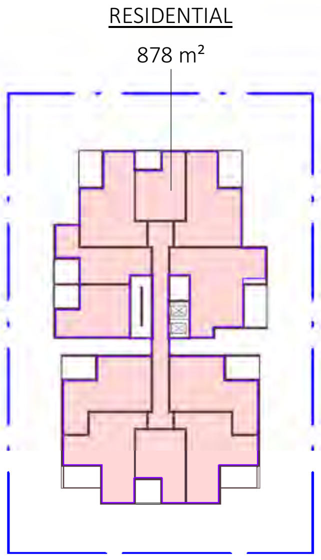
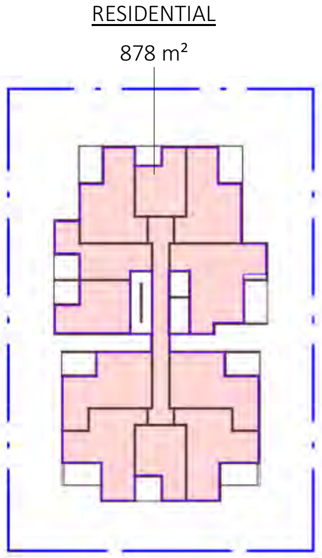
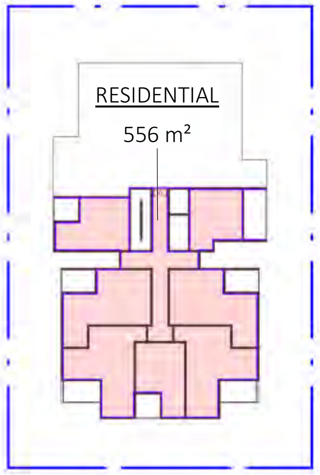
DA-0-303 1 : 1000



4 (S1) LEVEL 3
DA-0-303 1 : 1000



5 (S1) LEVEL 4
DA-0-303 1 : 1000



6 (S1) LEVEL 5
DA-0-303 1 : 1000

(STAGE 1) Residential By Bedrooms

Name	Count	Area
(S1) GROUND		
1BD	1	50 m²
2BD	2	75 m² … 75 m²
(S1) LEVEL 1		
1BD	3	50 m² … 56 m²
2BD	6	79 m² … 79 m²
3BD	1	99 m²
(S1) LEVEL 2		
1BD	4	50 m² … 56 m²
2BD	6	79 m² … 79 m²
3BD	1	99 m²
(S1) LEVEL 3		
1BD	4	50 m² … 56 m²
2BD	6	79 m² … 79 m²
3BD	1	99 m²
(S1) LEVEL 4		
1BD	4	50 m² … 56 m²
2BD	6	79 m² … 79 m²
3BD	1	99 m²
(S1) LEVEL 5		
1BD	3	50 m² … 56 m²
2BD	4	79 m² … 79 m²
Grand total	53	

(Area) GFA - STAGE 1

Level	Area
RESIDENTIAL	
(S1) GROUND	289 m²
(S1) LEVEL 1	868 m²
(S1) LEVEL 2	878 m²
(S1) LEVEL 3	878 m²
(S1) LEVEL 4	878 m²
(S1) LEVEL 5	556 m²
Total	4348 m²

SITE AREA	2454m²
LEP BASE FSR	2.0:1
ALLOWED GFA	4908m²
PROPOSED FSR	1.8:1
PROPOSED GFA	4348m²
TOTAL	53 UNITS

(STAGE 1) Unit Mix

Name	Count
1BD	19
2BD	30
3BD	4
Grand total	53

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PROJECT
MIXED USE DEVELOPMENT - OPTION 3
(SERVICED APARTMENTS)
1 VENO STREET, HEATHCOTE

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DRAWING
GFA DIAGRAMS - STAGE 1

PROJECT NO.	DRAWING NO.	REVISION	DATE
23-049	DA-0-901	D	27/09/2023

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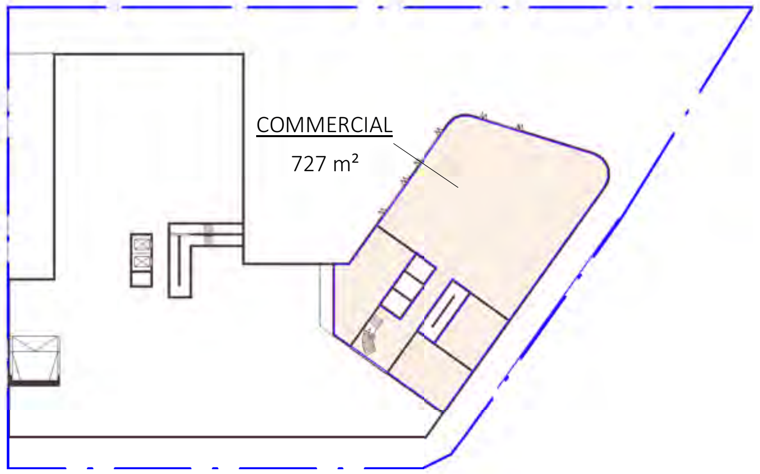

1 (S2) LOWER GROUND
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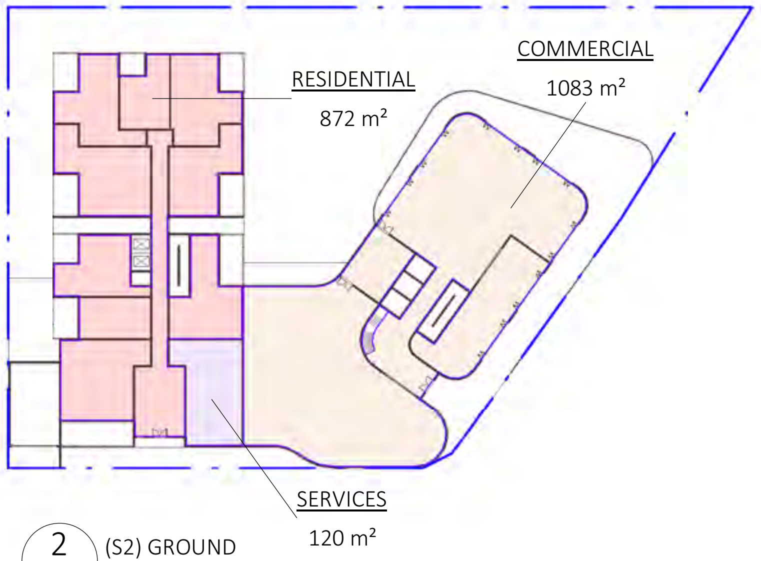
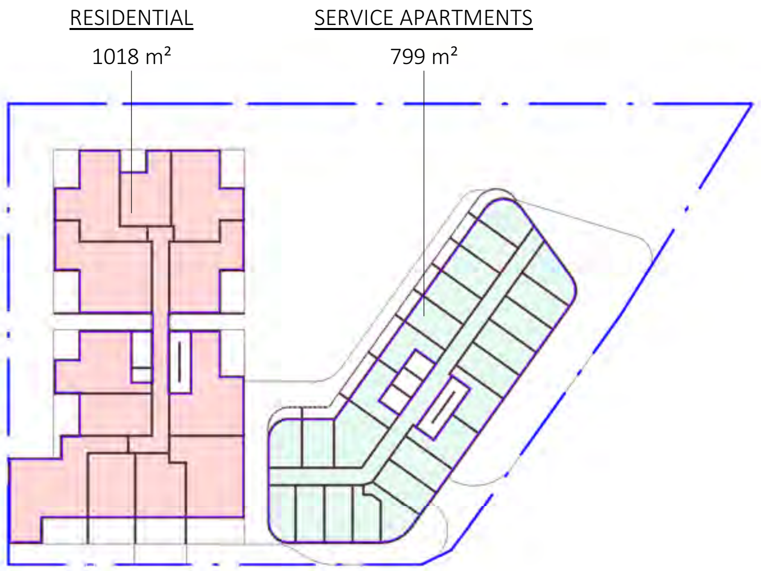


2 (S2) GROUND
DA-0-301 1 : 1000



3 (S2) TYPICAL LEVEL 1-2
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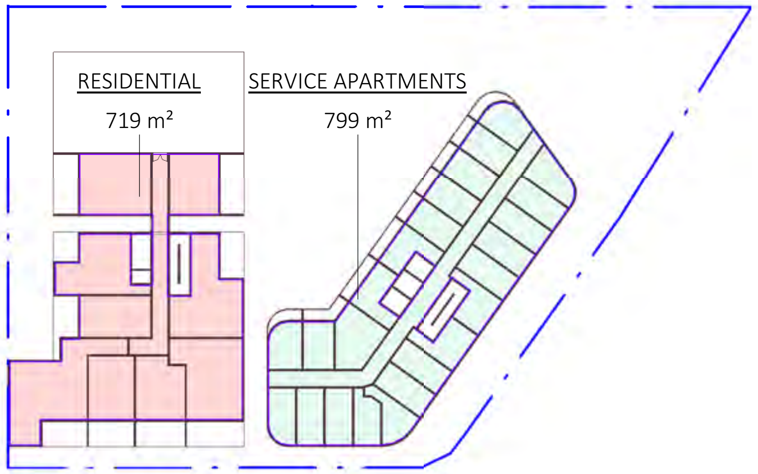

4 (S2) LEVEL 3
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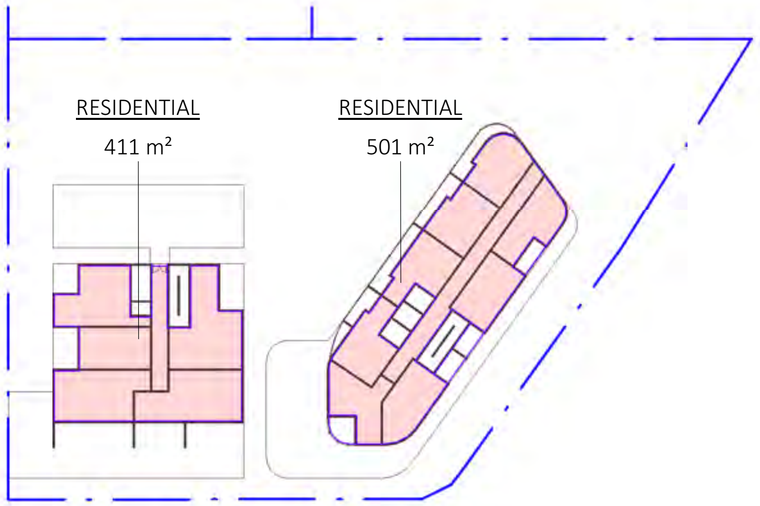

5 (S2) LEVEL 4-5
DA-0-301 1 : 1000

(STAGE 2) Residential By Bedrooms

Name	Count	Area
(S2) GROUND		
1BD	2	51 m² ... 53 m²
1BD+	1	70 m²
2BD	4	77 m² ... 86 m²
3BD	2	104 m² ... 109 m²
(S2) LEVEL 1		
1BD	4	50 m² ... 53 m²
1BD+	1	70 m²
2BD	5	79 m² ... 88 m²
3BD	2	106 m² ... 112 m²
(S2) LEVEL 2		
1BD	4	50 m² ... 53 m²
1BD+	1	70 m²
2BD	5	79 m² ... 88 m²
3BD	2	106 m² ... 112 m²
(S2) LEVEL 3		
1BD	4	50 m² ... 52 m²
1BD+	1	70 m²
2BD	3	75 m² ... 88 m²
3BD	1	112 m²
(S2) LEVEL 4		
1BD	9	50 m² ... 53 m²
1BD+	1	70 m²
2BD	3	75 m² ... 88 m²
(S2) LEVEL 5		
1BD	9	50 m² ... 53 m²
1BD+	1	70 m²
2BD	3	75 m² ... 88 m²
Grand total	68	

(Area) GFA - STAGE 2

Level	Area
COMMERCIAL	
(S2) LOWER GROUND	727 m²
(S2) GROUND	1083 m²
	1810 m²
RESIDENTIAL	
(S2) GROUND	872 m²
(S2) LEVEL 1	1018 m²
(S2) LEVEL 2	1098 m²
(S2) LEVEL 3	719 m²
(S2) LEVEL 4	411 m²
(S2) LEVEL 4	501 m²
(S2) LEVEL 5	411 m²
(S2) LEVEL 5	501 m²
	5532 m²
SERVICE APARTMENTS	
(S2) LEVEL 1	799 m²
(S2) LEVEL 2	640 m²
(S2) LEVEL 3	799 m²
	2238 m²
SERVICES	
(S2) GROUND	120 m²
	120 m²
Total	9699 m²

SITE 1 AREA	4791m²

LEP BASE FSR	2.0:1
ALLOWED GFA	9582m²

PROPOSED FSR	2.02:1
PROPOSED GFA	9699m²

RESIDENTIAL

TOTAL	68 UNITS

SERVICED APARTMENTS

TOTAL	69 UNITS

(STAGE 2) Unit Mix

Name	Count
1BD	32
1BD+	6
2BD	23
3BD	7
Grand total	68

(STAGE 2) Serviced Apartments by Levels

Name	Count	Area
(S2) LEVEL 1		
SA	23	23 m² ... 28 m²
(S2) LEVEL 2		
SA	23	23 m² ... 28 m²
(S2) LEVEL 3		
SA	23	23 m² ... 28 m²
Grand total	69	

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PROJECT
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1 VENO STREET, HEATHCOTE

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GFA DIAGRAMS - STAGE 2

PROJECT NO.	DRAWING NO.	REVISION	DATE
23-049	DA-0-904	D	27/09/2023

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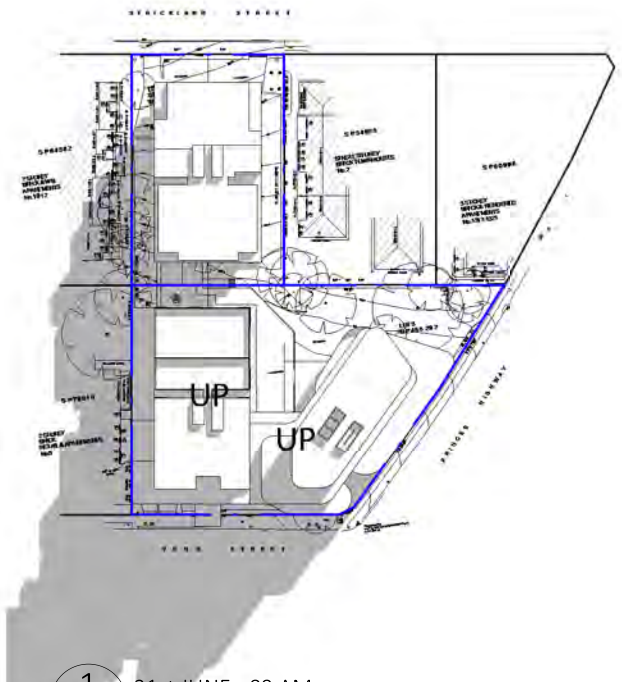

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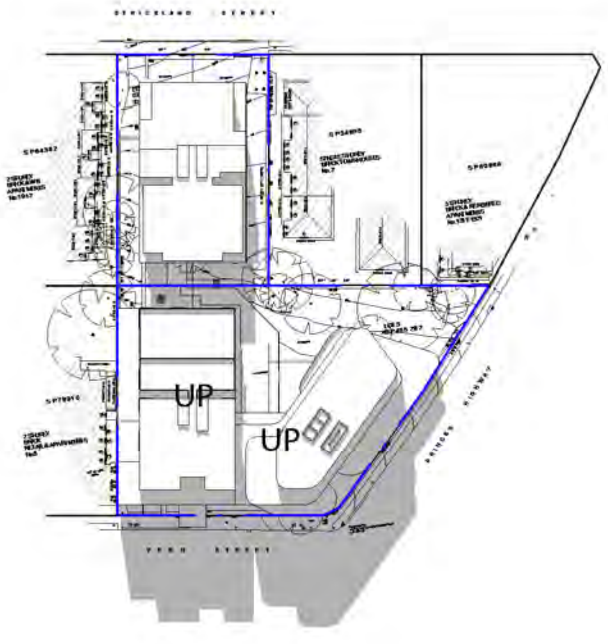
DA-0-301 1 : 2000

2 21st JUNE - 10 AM
DA-0-301 1 : 2000

3 21st JUNE - 11 AM
DA-0-301 1 : 2000



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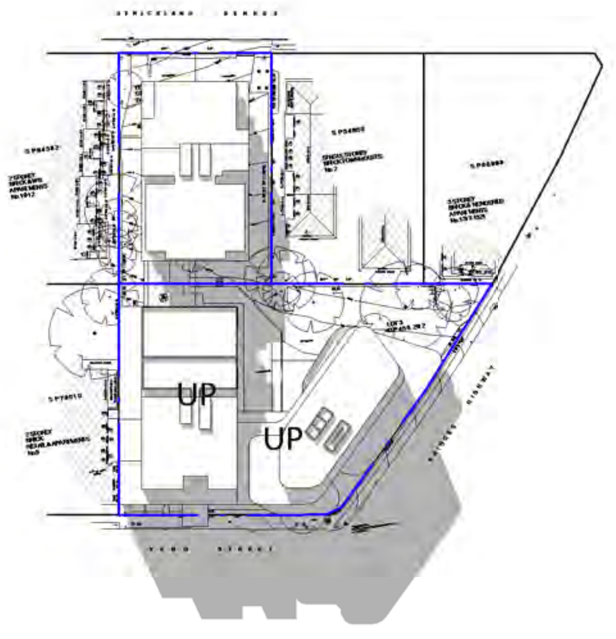

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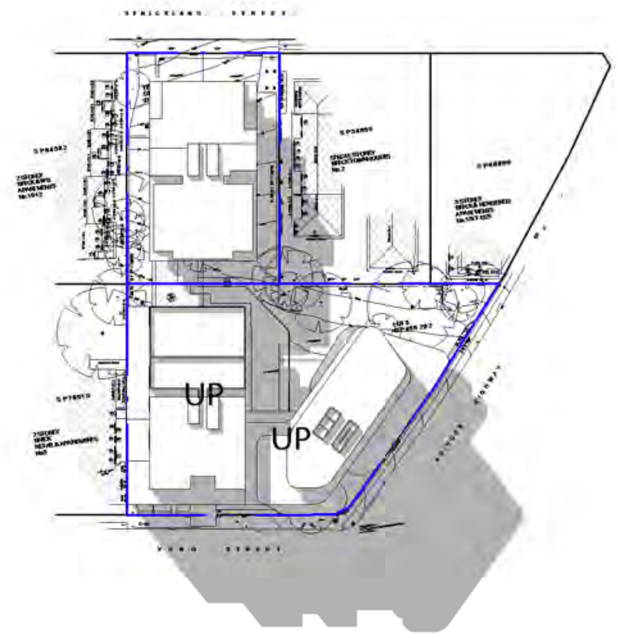

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7 21st JUNE - 03 PM
DA-0-301 1 : 2000

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Nominated Architects:
Robert Nigel Dickson NSW ARB #5364
Paul Oreshkin NSW ARB #7774

www.dicksonrothschild.com.au

REV	DESCRIPTION	DATE	ISSUED	CHECKED
A	ISSUE FOR REVIEW	25/08/2023	RM	ND
B	ISSUE FOR REVIEW	30/08/2023	RM	ND
C	ISSUE FOR REVIEW	27/09/2023	HS	PO

N

PROJECT
MIXED USE DEVELOPMENT - OPTION 3
(SERVICED APARTMENTS)
1 VENO STREET, HEATHCOTE

CLIENT
GAVIN DUFFY

FEASIBILITY STUDY
C:\Users\HShah\Documents\23-049-DA-0-R23-(CEN)_hshah8369Z.rvt

DRAWING
SHADOW ANALYSIS

PROJECT NO.	DRAWING NO.	REVISION	DATE
23-049	DA-0-951	C	27/09/2023

SCALE @ A3	DRAWN	AUTHORISED
1 : 2000	RM	ND

PRINTED: 27/09/2023 5:01:30 PM

WINDOW SCHEDULE

WINDOW No.	HEAD R.L.	SILL R.L.
1	196.44	195.45
2	196.44	195.32
3	193.58	192.92
4	193.58	192.49
5	193.59	192.66
6	193.59	192.66
7	190.68	189.42
8	190.68	DOOR
9	190.68	189.42
10	190.69	---
11	190.69	---
12	189.67	188.59
13	189.67	DOOR
14	189.67	188.59
15	189.67	DOOR
16	189.67	DOOR
17	189.67	188.59
18		
19	198.53	197.02
20	198.53	197.02
21	195.35	---
22	198.18	196.83
23	195.35	----
24	198.18	196.83
25	195.34	---
26	198.16	197.53
27	190.89	189.85
28	190.89	189.85
29	190.88	190.28
30	188.55	---
31	191.40	190.36
32	188.51	DOOR
33	191.39	190.36
34	192.14	191.14
35	192.13	191.14
36	189.33	---
37	192.70	192.09
38	192.62	191.64
39	192.62	191.65
40	193.30	192.33
41	193.30	192.33
42	189.30	DOOR
43	189.78	DOOR
44	190.50	---
45	193.88	192.85
46	193.88	192.85
47	191.08	DOOR
48	194.55	193.51
49	194.55	193.51
50	194.55	193.51
51	194.58	193.96

LEGEND:

- DRINKING FOUNTAIN
- FIRE HYDRANT
- HYDRANT
- STOP VALVE
- WATER TAP
- WATER VALVE
- WATER METER
- DP DOWN PIPE
- CONRETE LID
- MAN HOLE
- METAL LID
- GRATED DRAIN
- SEWER/SEPTIC IP
- SEWER MAN HOLE
- SEWER VENT
- ELECTRICAL CABLE MARKER
- ELECTRICAL PILLAR
- ELECTRICAL PIT
- ELECTRICAL BOX
- LIGHT POLE
- POWER POLE
- OPTICAL FIBRE MARKER
- FIBRE OPTICS BOX
- COMMS PIT
- COMMS PILLAR
- GAS MARKER
- GAS VALVE
- GAS METER
- TREE
- WINDOW
- H HEAD OF WINDOW
- S SILL OF WINDOW
- RUBBISH BIN
- BOL BOLLARD
- POST BOX
- PARKING METER
- STREET SIGN
- TRAFFIC LIGHT
- TRAFFIC CONTROL BOX
- TRAFFIC SIGNAL BOX
- BOUNDARY LINE
- BITUMEN LINE
- TOP OF BANK
- BOTTOM OF BANK
- CONCRETE LINE
- EASEMENT LINE
- FENCE LINE
- GARDEN
- PAVERS LINE
- KERB LINE
- POOL
- ROCK
- ROOF LINE

Detail Survey Certificate (Clause 9)

I, Scott Keith Murray BSurv (UNSW) MIS of Boxall Surveyors, a surveyor registered under the Surveying and Spatial Information Act 2002, certify that the survey represented in this plan was made in accordance with Clause 9 of the Surveying and Spatial Information Regulation 2017 with regard to the location of the approximate boundaries shown on this plan.

Signature: S Murray

Dated: 08-Sep-21

Surveyor Identification No: 1680

Surveyor registered under the Surveying and Spatial Information Act 2002

NOTES:

1. ONLY SERVICES WHICH WERE VISIBLE & ACCESSIBLE AT THE TIME OF THE SURVEY ARE SHOWN. FULL DETAILS OF SEWER AND OTHER SERVICES SHOULD BE OBTAINED FROM THE RELEVANT AUTHORITIES. UNDERGROUND SERVICES INFORMATION CAN BE OBTAINED FROM DIAL BEFORE YOU DIG (PH 1100) OR www.dialbeforeyoudig.com.au.
2. CONTOURS ARE APPROXIMATE ONLY, PREFERENCE TO BE GIVEN TO SPOT HEIGHTS.
3. MAJOR TREES SHOWN ONLY.
4. DIMENSIONS AND AREA ARE SUBJECT TO SURVEY.
5. PROJECT CO-ORDINTES ARE MGA2020 (ZONE56)
6. THIS PLAN HAS BEEN PREPARED FOR THE SOLE PURPOSE OF LODGING A DEVELOPMENT APPLICATION WITH THE LOCAL COUNCIL. THIS PLAN IS NOT TO BE USED FOR ANY OTHER PURPOSE WITHOUT THE EXPRESS PERMISSION OF BOXALL SURVEYORS PTY LTD.

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02 9521 5737 | www.boxallsurveyors.com.au | ACN 114 644 058

TITLE: PLAN OF SITE DETAIL & LEVELS

REV	DATE	REVISION DETAILS

ORIGIN LEVELS: SSM56874	R.L.193.124
AZIMUTH: MGA20	DATUM: AHD
SURVEY: BC	DATE: 27.08.2021
DRAWN: EL	DATE: 08.09.2021
APPROVED: SM	DATE: 08.09.2021
SCALE: 1:300	SHEET 1 OF 1
DRAWING No: 11260-001-A	REV: A SIZE: A1

Appendix D – Borehole Logs

BOREHOLE LOG

BH ID: BH1

Location 1 Veno Street, Heathcote NSW
Client Duffy Kennedy
Job No. .E01
Sheets 1 of 1

Started 17 October 2023
Completed 17 October 2023
Logged By SN **Date** 17 October 2023
Review By **Date**

Drilling Contractor Hartgeo
Plant Ute-Mounted Rig
Surface RL ≈185.51 m (AHD)
Inclination 90°
Latitude -
Longitude -

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T				0.00		185.51	ASPHALT: 100mm thick			ASPHALT
	GWNE	BH1_0.20-0.30 PID = 0.2 PPM	■	0.10		185.41	FILL: Silty CLAY: medium plasticity, dark brown, with angular to sub-angular gravels, No odour	M		FILL
				0.40		185.11	SANDSTONE: yellow-brown, extremely weathered			WEATHERED ROCK
						184.61	Terminated at 0.90m. Refusal on bedrock.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH10M

Location 1 Veno Street, Heathcote NSW
Client Duffy Kennedy
Job No. .E01
Sheets 1 of 1

Started 17 October 2023
Completed 17 October 2023
Logged By SN **Date** 17 October 2023
Review By **Date**

Drilling Contractor Hartgeo
Plant Ute-Mounted Rig
Surface RL ≈191.37 m (AHD)
Inclination 90°
Latitude -
Longitude -

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T				0.00		191.37	ASPHALT: 100mm thick			ASPHALT
		BH10M_0.20-0.30 PID = 0.2 PPM		0.10		191.27	FILL: Clayey SAND: fine to medium grained, brown, sub-angular to angular gravels, No odour			FILL
		BH10M_0.50-0.60		0.40		190.97	Silty CLAY: medium plasticity, brown / orange, mottled red, trace ironstone gravels, No odour	M	St	RESIDUAL SOIL
				4.50		186.87	SANDSTONE: yellow-brown, extremely weathered			BEDROCK
				9		182.37	Terminated at 9.00m. Target Depth Reached.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

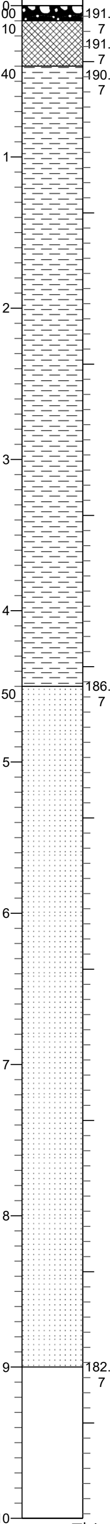
eiaustralia

BOREHOLE LOG

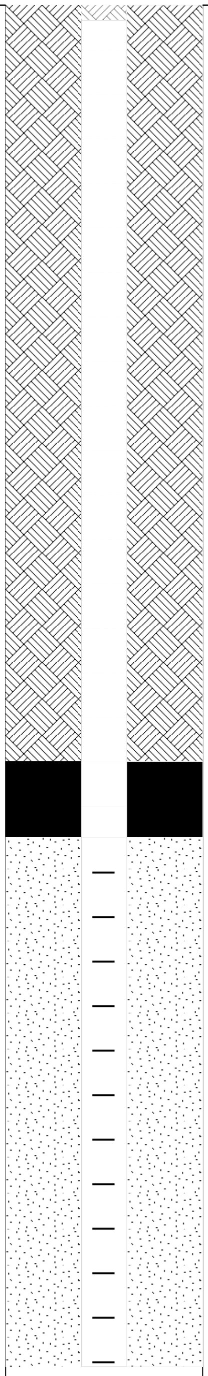
BH ID: BH10M

Location	1 Veno Street, Heathcote NSW	**Started**	17 October 2023		
Client	Duffy Kennedy	**Completed**	17 October 2023		
Job No.	.E01	**Logged By**	SN	**Date**	17 October 2023
Sheets	1 of 1	**Review By**		**Date**	

Drilling Contractor	Hartgeo	**Surface RL**	≈191.37 m (AHD)	**Latitude**	-
Plant	Ute-Mounted Rig	**Inclination**	90°	**Longitude**	-



WATER	SAMPLES & FIELD TESTS	DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION
		0.00	191.37	ASPHALT: 100mm thick	
	BH10M_0.20-0.30 PID = 0.2 PPM	0.10	191.27	FILL: Clayey SAND: fine to medium grained, brown, sub-angular to angular gravels, No odour	M
	BH10M_0.50-0.60	0.40	190.97	Silty CLAY: medium plasticity, brown / orange, mottled red, trace ironstone gravels, No odour	
		4.50	186.87	SANDSTONE: yellow-brown, extremely weathered	
		9	182.37	Terminated at 9.00m. Target Depth Reached.	



BACKFILL DETAILS

Cuttings
0.00m - 5.00m

Bentonite
5.00m - 5.50m

Sand
5.50m - 9.00m

STANDPIPE DETAILS

0.10m - 5.50m
PVC casing (50mm Ø)

5.50m - 9.0m
PVC screen (50mm Ø)

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

eiaustralia

BOREHOLE LOG

BH ID: BH2M

Location	1 Veno Street, Heathcote NSW	**Started**	17 October 2023		
Client	Duffy Kennedy	**Completed**	17 October 2023		
Job No.	.E01	**Logged By**	SN	**Date**	17 October 2023
Sheets	1 of 1	**Review By**		**Date**	

Drilling Contractor	Hartgeo	**Surface RL**	≈185.81 m (AHD)	**Latitude**	-
Plant	Ute-Mounted Rig	**Inclination**	90°	**Longitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T				0.00		185.81	ASPHALT: 100mm thick			ASPHALT
	GWNE	BH2M_0.20-0.30 PID = 0.3 PPM	■	0.10		185.71	FILL: Silty CLAY: medium plasticity, brown / orange, with angular to sub-angular gravels, No odour	M		FILL
				0.40		185.41	SANDSTONE: fine to medium grained, yellow brown, extremely weathered			WEATHERED ROCK
						176.61	Terminated at 9.20m. Target Depth Reached.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

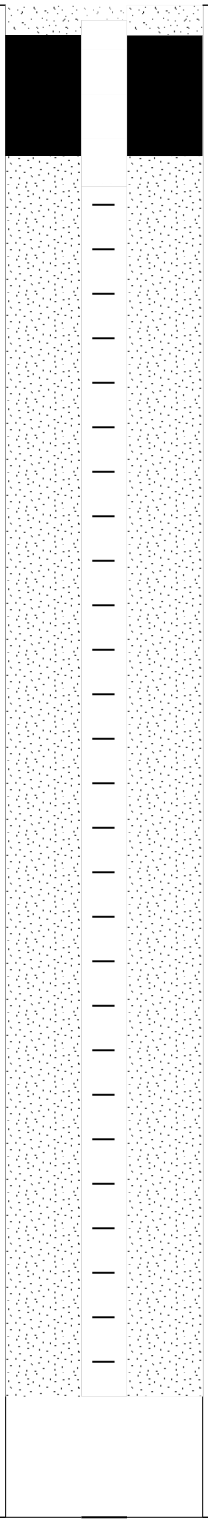
BH ID: BH2M

Location 1 Veno Street, Heathcote NSW
Client Duffy Kennedy
Job No. .E01
Sheets 1 of 1

Started 17 October 2023
Completed 17 October 2023
Logged By SN **Date** 17 October 2023
Review By **Date**

Drilling Contractor Hartgeo
Plant Ute-Mounted Rig
Surface RL ≈185.81 m (AHD)
Inclination 90°
Latitude -
Longitude -

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION
		0.00		185.81	ASPHALT: 100mm thick	
GWNE	BH2M_0.20-0.30 PID = 0.3 PPM	0.10		185.71	FILL: Silty CLAY: medium plasticity, brown / orange, with angular to sub-angular gravels, No odour	M
		0.40		185.41	SANDSTONE: fine to medium grained, yellow brown, extremely weathered	
				176.61	Terminated at 9.20m. Target Depth Reached.	



BACKFILL DETAILS	STANDPIPE DETAILS
Grout 0.00m - 0.20m	
Bentonite 0.20m - 1.00m	0.10m - 1.20m PVC casing (50mm Ø)
Sand 1.00m - 9.20m	1.20m - 9.20m PVC screen (50mm Ø)

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

eiaustralia

BOREHOLE LOG

BH ID: BH3

Location 1 Veno Street, Heathcote NSW
Client Duffy Kennedy
Job No. .E01
Sheets 1 of 1

Started 17 October 2023
Completed 17 October 2023
Logged By SN **Date** 17 October 2023
Review By **Date**

Drilling Contractor Hartgeo
Plant Ute-Mounted Rig
Surface RL ≈188.00 m (AHD)
Inclination 90°
Latitude -
Longitude -

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T				0.00	▩	188.00	ASPHALT: 200mm thick			ASPHALT
	GWNE	BH3_0.30-0.40 PID = 0.1 PPM	■	0.20	▨	187.80	FILL: Silty CLAY: low plasticity, brown / orange, with angular to sub-angular gravels, No odour	M		FILL
		BH3_0.70-0.80	■	0.50	▤	187.50	Silty CLAY: medium plasticity, brown / orange, trace sandstone gravels, No odour	M < PL	St	RESIDUAL SOIL
						186.90	Terminated at 1.10m. Target Depth Reached.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH4

Location 1 Veno Street, Heathcote NSW
Client Duffy Kennedy
Job No. .E01
Sheets 1 of 1
Started 17 October 2023
Completed 17 October 2023
Logged By SN **Date** 17 October 2023
Review By **Date**

Drilling Contractor Hartgeo
Plant Ute-Mounted Rig
Surface RL ≈192.61 m (AHD)
Inclination 90°
Latitude -
Longitude -

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T				0.00		192.61	ASPHALT: 200mm thick			ASPHALT
	GWNE	BH4_0.30-0.40 PID = 0.4 PPM	■	0.20		192.41	FILL: Clayey SAND: fine to medium grained, brown, sub-angular to angular gravels, No odour	M		FILL
		BH4_0.60-0.70 PID = 0.1 PPM	■	0.60		192.01	Silty CLAY: medium plasticity, brown / orange, mottled red, trace ironstone gravels, No odour	M	F	RESIDUAL SOIL
						191.41	Terminated at 1.20m. Target Depth Reached.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH5

Location	1 Veno Street, Heathcote NSW	**Started**	17 October 2023		
Client	Duffy Kennedy	**Completed**	17 October 2023		
Job No.	.E01	**Logged By**	SN	**Date**	17 October 2023
Sheets	1 of 1	**Review By**		**Date**	

Drilling Contractor	Hartgeo	**Surface RL**	≈190.44 m (AHD)	**Latitude**	-
Plant	Ute-Mounted Rig	**Inclination**	90°	**Longitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T				0.00		190.44	ASPHALT: mm thick			ASPHALT
	GWNE	BH5_0.3-0.4	■	0.20		190.24	FILL: Clayey SAND: fine-grained, pale brown, trace sub-angular to angular gravels, No odour	D M		FILL
		BH5_0.8-0.9	■	0.50		189.94	Silty CLAY: medium plasticity, fine to medium grained, yellow brown, mottled red, trace sub-angular to angular ironstone gravels, No odour	M	F	RESIDUAL SOIL
						188.94	Terminated at 1.50m. Target depth reached Refusal on bedrock.			

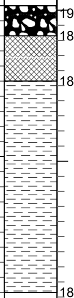
This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH6

Location	1 Veno Street, Heathcote NSW	**Started**	17 October 2023		
Client	Duffy Kennedy	**Completed**	17 October 2023		
Job No.	.E01	**Logged By**	SN	**Date**	17 October 2023
Sheets	1 of 1	**Review By**		**Date**	

Drilling Contractor	Hartgeo	**Surface RL**	≈190.03 m (AHD)	**Latitude**	-
Plant	Ute-Mounted Rig	**Inclination**	90°	**Longitude**	-



METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T				0.00	190.03	ASPHALT: mm thick			ASPHALT
	GWNE	BH6_0.2-0.3	■	0.20	189.83	FILL: Silty CLAY: medium plasticity, brown yellow, with sub-angular to angular gravels, No odour	M		FILL
				0.50	189.53	Silty CLAY: medium plasticity, brown yellow, mottled red, No odour	M	F	RESIDUAL SOIL
					188.13	Terminated at 1.90m. Target depth reached.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH7M

Location	1 Veno Street, Heathcote NSW	**Started**	17 October 2023		
Client	Duffy Kennedy	**Completed**	17 October 2023		
Job No.	.E01	**Logged By**	SN	**Date**	17 October 2023
Sheets	1 of 1	**Review By**		**Date**	

Drilling Contractor	Hartgeo	**Surface RL**	≈190.85 m (AHD)	**Latitude**	-
Plant	Ute-Mounted Rig	**Inclination**	90°	**Longitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T				0.00		190.85	ASPHALT: mm thick			ASPHALT
	GWNE	BH7_0.2-0.3	■	0.20		190.65	FILL: Silty CLAY: low plasticity, brown yellow, with sub-angular to angular gravels, No odour	M		FILL
		BH7_0.5-0.6	■	0.50		190.35	Silty CLAY: medium plasticity, brown yellow, mottled red, trace sub-angular to angular ironstone gravels, No odour	M	F	RESIDUAL SOIL
				3.00		187.85	From 3.00m, medium plasticity, grey-red, grading into weather sandstone, No odour			
				4.10		186.75	SANDSTONE: fine to medium-grained, orange-pale grey			BEDROCK
				9		181.85	Terminated at 9.00m. Target depth reached.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

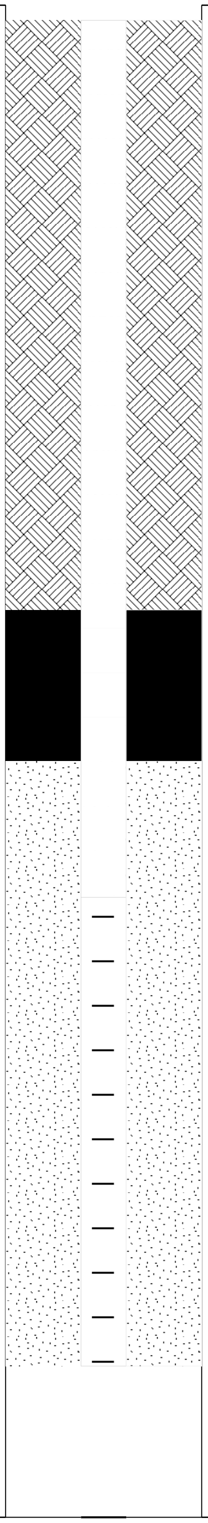
BH ID: BH7M

Location	1 Veno Street, Heathcote NSW	**Started**	17 October 2023
Client	Duffy Kennedy	**Completed**	17 October 2023
Job No.	.E01	**Logged By**	SN **Date** 17 October 2023
Sheets	1 of 1	**Review By**	**Date**

Drilling Contractor	Hartgeo	**Surface RL**	≈190.85 m (AHD)	**Latitude**	-
Plant	Ute-Mounted Rig	**Inclination**	90°	**Longitude**	-

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION
		0.00	190.85	ASPHALT: mm thick	
GWNE	BH7_0.2-0.3	0.20	190.65	FILL: Silty CLAY: low plasticity, brown yellow, with sub-angular to angular gravels, No odour	M
	BH7_0.5-0.6	0.50	190.35	Silty CLAY: medium plasticity, brown yellow, mottled red, trace sub-angular to angular ironstone gravels, No odour	
		3.00	187.85	From 3.00m, medium plasticity, grey-red, grading into weather sandstone, No odour	
95-95% Water		4.10	186.75	SANDSTONE: fine to medium-grained, orange-pale grey	
		9.00	181.85	Terminated at 9.00m. Target depth reached.	

BACKFILL DETAILS	STANDPIPE DETAILS
Cuttings 0.10m - 4.00m	0.10m - 5.90m PVC casing (50mm Ø)
Bentonite 4.00m - 5.00m	
Sand 5.00m - 9.00m	5.90m - 9.0m PVC screen (50mm Ø)



This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH8

Location 1 Veno Street, Heathcote NSW
Client Duffy Kennedy
Job No. .E01
Sheets 1 of 1

Started 17 October 2023
Completed 17 October 2023
Logged By SN **Date** 17 October 2023
Review By **Date**

Drilling Contractor Hartgeo
Plant Ute-Mounted Rig
Surface RL ≈190.94 m (AHD)
Inclination 90°
Latitude -
Longitude -

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T	GWNE	BH8_0.1-0.2	■	0.00		190.94	ASPHALT:, No odourmm thick			ASPHALT
				0.10		190.84	FILL: Silty CLAY: medium plasticity, brown yellow, with sub-angular to angular gravels, No odour			FILL
				0.30		190.64	Silty CLAY: medium plasticity, brown yellow, mottled white, trace sub-angular to angular ironstone gravels, No odour	M	F	RESIDUAL SOIL
						190.14	Terminated at 0.80m. Target depth reached.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH9

Location	1 Veno Street, Heathcote NSW	**Started**	17 October 2023		
Client	Duffy Kennedy	**Completed**	17 October 2023		
Job No.	.E01	**Logged By**	SN	**Date**	17 October 2023
Sheets	1 of 1	**Review By**		**Date**	

Drilling Contractor	Hartgeo	**Surface RL**	≈191.91 m (AHD)	**Latitude**	-
Plant	Ute-Mounted Rig	**Inclination**	90°	**Longitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T	GWNE	BH9_0.10-0.20 PID = 0.4 PPM	■	0.00		191.91	ASPHALT: 100mm thick			ASPHALT
				0.10		191.81	FILL: Silty CLAY: low plasticity, brown / orange, with angular to sub-angular gravels, No odour			FILL
				0.30		191.61	Silty CLAY: medium plasticity, brown / orange, mottled red, trace ironstone gravels, No odour	M < PL	St	RESIDUAL SOIL
				1		190.91	Terminated at 1.00m. Target depth reached.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH11

Location 1 Veno Street, Heathcote NSW
Client Duffy Kennedy
Job No. E26160.E02
Sheets 1 of 1

Started 06 June 2024
Completed 06 June 2024
Logged By SN **Date** 06 June 2024
Review By **Date**

Drilling Contractor Hartgeo
Plant Ute-Mounted Rig
Surface RL -
Inclination 90°
Latitude -
Longitude -

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T				0.00			ASPHALT: 100mm thick			ASPHALT
		BH11_0.20-0.30 PID = 0.1 PPM	■	0.10			FILL: Gravelly SAND: fine to medium-grained, yellow / brown, with sub-angular to angular gravels, No odour	M		FILL
				0.30			FILL: Silty CLAY: medium plasticity, yellow / brown, trace angular to sub-angular gravels, No odour			
		BH11_0.60-0.70	■	0.50			Silty CLAY: medium to high plasticity, yellow / brown, mottled red, trace ironstone gravels, No odour			RESIDUAL SOIL
				1			Terminated at 1.00m. Target Depth Reached.			
				2						
				3						
				4						
				5						
				6						
				7						
				8						
				9						
				10						

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH12

Location 1 Veno Street, Heathcote NSW
Client Duffy Kennedy
Job No. E26160.E02
Sheets 1 of 1

Started 06 June 2024
Completed 06 June 2024
Logged By SN **Date** 06 June 2024
Review By **Date**

Drilling Contractor Hartgeo
Plant Ute-Mounted Rig
Surface RL -
Inclination 90°
Latitude -
Longitude -

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T		BH12_0.10-0.20 PID = 0.0 PPM		0.00			ASPHALT: 100mm thick			ASPHALT
				0.10			FILL: Silty CLAY: low plasticity, yellow / brown, with angular to sub-angular gravels, No odour			FILL
				0.20			Silty CLAY: low plasticity, yellow / brown, mottled red, trace ironstone gravels, No odour	M		RESIDUAL SOIL
				0.70			From 0.70m, Mottled white			
				1			Terminated at 1.00m. Target Depth Reached. Terminated at 1.00m. Target Depth Reached.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH14

Location	1 Veno Street, Heathcote NSW	**Started**	06 June 2024		
Client	Duffy Kennedy	**Completed**	06 June 2024		
Job No.	E26160.E02	**Logged By**	SN	**Date**	06 June 2024
Sheets	1 of 1	**Review By**		**Date**	

Drilling Contractor	Hartgeo	**Surface RL**	-	**Latitude**	-
Plant	Ute-Mounted Rig	**Inclination**	90°	**Longitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T		BH14_0.10-0.20 PID = 0.0 PPM	■	0 0.00	●		ASPHALT: 100mm thick			ASPHALT
				0.10	▩		FILL: Sandy GRAVEL: sub-angular to angular gravels, fine to medium-grained sands, grey, No odour			FILL
				0.20	▩		FILL: Clayey SAND: brown mottled red, fine to medium-grained sands, trace ironstone gravels, No odour			FILL
		BH14_0.50-0.60	■	0.50	░		SAND: fine-grained, yellow, No odour	M		WEATHERED ROCK
				1			Terminated at 1.00m. Target Depth Reached.			
				2						
				3						
				4						
				5						
				6						
				7						
				8						
				9						
				10						

BOREHOLE LOG

BH ID: BH15

Location	1 Veno Street, Heathcote NSW	**Started**	06 June 2024			
Client	Duffy Kennedy	**Completed**	06 June 2024			
Job No.	E26160.E02	**Logged By**	SN	**Date**	06 June 2024	
Sheets	1 of 1	**Review By**		**Date**		

Drilling Contractor	Hartgeo	**Surface RL**	-	**Latitude**	-
Plant	Ute-Mounted Rig	**Inclination**	90°	**Longitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T				0.00			ASPHALT: 200mm thick			ASPHALT
		BH15_0.20-0.30 PID = 0.0 PPM	■	0.20			FILL: Silty CLAY: low plasticity, brown / orange, with sub-angular to angular gravels, No odour	M		FILL
				0.40			Clayey SAND: fine to medium-grained, yellow / brown, No odour			RESIDUAL SOIL
		BH15_0.60-0.70	■	0.60			Silty CLAY: medium plasticity, yellow / brown, mottled orange, with fine to medium-grained sands, No odour			
							Terminated at 0.80m. Target Depth Reached.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH16

Location	1 Veno Street, Heathcote NSW	**Started**	06 June 2024		
Client	Duffy Kennedy	**Completed**	06 June 2024		
Job No.	E26160.E02	**Logged By**	SN	**Date**	06 June 2024
Sheets	1 of 1	**Review By**		**Date**	

Drilling Contractor	Hartgeo	**Surface RL**	-	**Latitude**	-
Plant	Ute-Mounted Rig	**Inclination**	90°	**Longitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T				0.00			ASPHALT: 200mm thick			ASPHALT
		BH16_0.20-0.30 PID = 0.1 PPM	■	0.20			FILL: Clayey SAND: fine to medium-grained, yellow / brown, No odour	M		FILL
				0.50			SAND: fine to medium-grained, yellow, mottled red / white, trace sandstone gravels, No odour	D		RESIDUAL SOIL
							Terminated at 0.90m. Refusal on bedrock.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH17M

Location 1 Veno Street, Heathcote NSW
Client Duffy Kennedy
Job No. E26160.E02
Sheets 1 of 1

Started 06 June 2024
Completed 11 June 2024
Logged By SN **Date** 11 June 2024
Review By **Date**

Drilling Contractor Geosense Drilling Engineers
Plant Comacchio Geo 205
Surface RL ≈188.40 m (AHD)
Inclination 90°
Latitude -
Longitude -

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T				0.00	●	188.40	ASPHALT: 200mm thick			ASPHALT
		BH17_0.20-0.30 PID = 0.0 PPM	■	0.20	▨	188.20	FILL: Clayey SAND: fine to medium-grained, pale brown, with sub-angular to angular gravels, No odour	M		FILL
		BH17_0.50-0.60	■	0.50	▤	187.90	Silty CLAY: medium plasticity, pale red, trace sandstone gravels, No odour			RESIDUAL SOIL
				1.00	░	187.40	SANDSTONE: fine to medium-grained, pale red, extremely weathered, No odour			WEATHERED ROCK
				2.30	░	186.10	SANDSTONE: fine to medium grained, pale red / grey			BEDROCK
				6		182.40	Terminated at 6.00m. Target Depth Reached.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

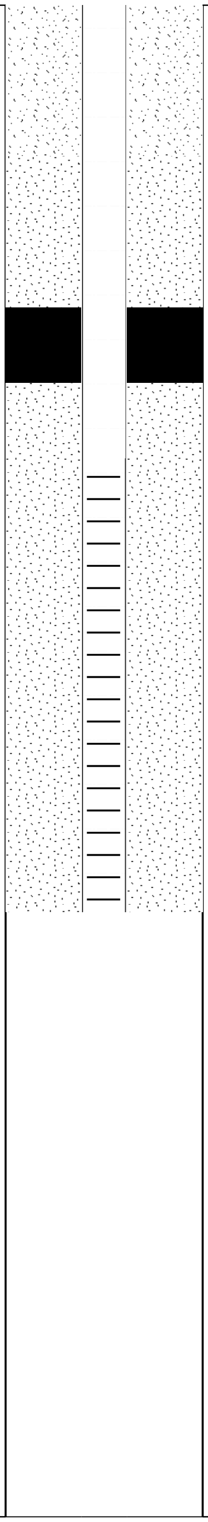
MONITORING WELL LOG

BH ID: BH17M

Location	1 Veno Street, Heathcote NSW	**Started**	06 June 2024		
Client	Duffy Kennedy	**Completed**	11 June 2024		
Job No.	E26160.E02	**Logged By**	SN	**Date**	11 June 2024
Sheets	1 of 1	**Review By**		**Date**	

Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈188.40 m (AHD)	**Latitude**	-
Plant	Comacchio Geo 205	**Inclination**	90°	**Longitude**	-

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION
		0.00		188.40	ASPHALT: 200mm thick	
	BH17M_0.20-0.30 PID = 0.0 PPM	0.20		188.20	FILL: Clayey SAND: fine to medium-grained, pale brown, with sub-angular to angular gravels, No odour	M
	BH17M_0.50-0.60	0.50		187.90	Silty CLAY: medium plasticity, pale red, trace sandstone gravels, No odour	
		1.00		187.40	SANDSTONE: fine to medium-grained, pale red, extremely weathered, No odour	
		2.30		186.10	SANDSTONE: fine to medium grained, pale red / grey	
		6		182.40	Terminated at 6.00m. Target Depth Reached.	



BACKFILL DETAILS

Grout 0.00m - 1.00m

Sand 1.00m - 2.00m

Bentonite 2.00m - 2.50m

Sand 2.50m - 6.00m

STANDPIPE DETAILS

Well Stickup =0.0m (RL 188.40m)

0.0m - 3.0m PVC casing (50mm Ø)

3.0m - 6.0m PVC screen (50mm Ø)

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH7M-DL1

Location	1 Veno Street, Heathcote NSW	**Started**	06 June 2024		
Client	Duffy Kennedy	**Completed**	06 June 2024		
Job No.	E26160.E02	**Logged By**	SN	**Date**	
Sheets	1 of 1	**Review By**		**Date**	

Drilling Contractor	Hartgeo	**Surface RL**	-	**Latitude**	-
Plant	Ute-Mounted Rig	**Inclination**	90°	**Longitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T		BH7M-DL1_0.10-0.20 PID = 0.0 PPM		0.00			ASPHALT: 100mm thick	M		ASPHALT
			■	0.10			FILL: Silty CLAY: medium plasticity, yellow / brown, with angular to sub-angular gravels, No odour			FILL
				0.40			Silty CLAY: medium to high plasticity, yellow / brown, trace ironstone gravels, No odour			RESIDUAL SOIL
				1			Terminated at 1.00m. Target Depth Reached.			
				2						
				3						
				4						
				5						
				6						
				7						
				8						
				9						
				10						

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH7M-DL2

Location 1 Veno Street, Heathcote NSW
Client Duffy Kennedy
Job No. E26160.E02
Sheets 1 of 19

Started 06 June 2024
Completed 06 June 2024
Logged By SN **Date**
Review By **Date**

Drilling Contractor Hartgeo
Plant Ute-Mounted Rig
Surface RL -
Inclination 90°
Latitude -
Longitude -

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T				0.00			ASPHALT: 100mm thick			ASPHALT
		BH7M-DL2_0.20-0.30 PID = 0.0 PPM	■	0.10	▨		FILL: Silty CLAY: low plasticity, yellow / brown, with angular to sub-angular gravels, No odour	M		FILL
				0.50	▤		Silty CLAY: medium to high plasticity, yellow / brown, trace ironstone gravels, No odour			
				1			Terminated at 1.00m. Target Depth Reached.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH7M-DL3

Location	1 Veno Street, Heathcote NSW	**Started**	06 June 2024		
Client	Duffy Kennedy	**Completed**	06 June 2024		
Job No.	E26160.E02	**Logged By**	SN	**Date**	
Sheets	1 of 1	**Review By**		**Date**	

Drilling Contractor	Hartgeo	**Surface RL**	-	**Latitude**	-
Plant	Ute-Mounted Rig	**Inclination**	90°	**Longitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T		BH7M-DL3_0.10-0.20 PID = 0.0 PPM		0.00			ASPHALT: 100mm thick			ASPHALT
			■	0.10			FILL: Gravelly SAND: fine to medium-grained, yellow, with aub-angular to angular gravels, No odour	M		FILL
				0.30			FILL: Silty CLAY: low plasticity, yellow / brown, with angular to sub-angular gravels, No odour			
				0.50			Silty CLAY: medium to high plasticity, yellow / brown, trace ironstone gravels, No odour			RESIDUAL SOIL
				1			Terminated at 1.00m. Target Depth Reached.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

Appendix E – Site Photographs

Photograph 1: Image of the Heathcote Hotel (dated 17 October 2023).

Photograph 2: Image of the south-eastern section of the car park (dated 17 October 2023).

Photograph 3: Image of the northern section of the car park (dated 17 October 2023).

Photograph 4: Image of the western driveway, looking south (dated 17 October 2023).

Photograph 5: Image of the approximate location of the UST (dated 5 June 2024).

Photograph 6: Image of the approximate location of the UST and service locating showing potential underground piping, looking east (dated 5 June 2024).

Photograph 7: Image of the approximate location of the UST and service locating showing potential underground piping, looking north (dated 5 June 2024).

Photograph 8: Image of the GPR scan showing approximate depth of UST (image courtesy of A1 Locate Pty Ltd).

Photograph 9: Image BH7M hotspot delineation location (dated 5 June 2024).

Photograph 10: Image of borehole BH11 (dated 5 June 2024).

Photograph 11: Image of borehole BH16 (dated 5 June 2024).

Appendix F – Field Data Sheets

WATER SAMPLING FIELD SHEET

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Site Address: 1 Veno St, Heathcote
Job Number: F26160
Client: Duffy Kennedy
Date: 26/10/23
Field Staff: Sean
Sampling Location ID BH2M
Well Location: Northern side
Round No: 1

MEDIUM ☑Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date: 16/10/23
Stick up / down (m): -0.10 (+ above ground - below ground)
Initial Well Depth (mBTOC): 9.10
Screen Interval (mBTOC): 1.1 - 9.1
Previous Sampling Date: –
Previous SWL (mBTOC): –

PID READINGS

PID Headspace (ppm):
PID Background (ppm): –
PID Breathing Space (ppm): –

PRE PURGE

Total Well Depth (mBTOC): 9.10
Well Head Condition: Good
SWL (mBTOC): 3.23
Water Column (m): 5.87

PHASE SEPARATED HYDROCARBONS (PSH)

Depth to PSH (mBTOC): –
PSH Visually Confirmed (Bailer): –
PSH Thickness (mm): –

Field Filtered

Yes (0.45 µm) ☑
No ☐ (Request lab 0.45 µm filter the sample)

PURGE AND SAMPLE

Sampling Method ☐Bladder ☑Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet (mBTOC):
Fill Timer:
Pump Pressure Regulator (psi):
Discharge Timer:
Weather Conditions: Overcast
Cycle:
Pump on time: 9:50am
Pump off time:

WATER QUALITY PARAMETERS

Probe Make and Model:
Bump Test Date and Time:

Time	Volume (L)	SWL (mbtoc)	Temp (°C)	EC (µS/cm)	Redox (mV)	DO (mg/L)	pH (units)	Comments (colour, turbidity, odour, sheen etc.)
	0.5	3.26	20.23	351	-24.6	1.50	6.30	Grey, low turbidity, no odour, slight sheen
	1.0	3.30	20.46	260	-3.6	1.64	5.63	" "
	1.5	3.32	20.32	281	-6.3	1.61	5.59	Light brown, low turb., no odour/sheen
	2.0	3.33	20.38	272	-7.1	1.59	5.61	" "
Stabilisation range: **3 consecutive readings**			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS: * QAQC: GWQD_20231026
GWQT_20231026

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address: 1 Veno St, Heathcote
Job Number: E26160
Client: Duffy Kennedy
Date: 26/10/23
Field Staff: Sean
Sampling Location ID: BH7M
Well Location: Eastern side
Round No: 1

MEDIUM ☑Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date: 18/10/23
Stick up / down (m): -0.10 (+ above ground - below ground)
Initial Well Depth (mBTOC): 8.8
Screen Interval (mBTOC): 5.8 - 8.8
Previous Sampling Date: -
Previous SWL (mBTOC): -

PID READINGS

PID Headspace (ppm):
PID Background (ppm): -
PID Breathing Space (ppm): -

PRE PURGE

Total Well Depth (mBTOC): 8.8
Well Head Condition: Good
SWL (mBTOC): 2.09
Water Column (m): 6.71

PHASE SEPARATED HYDROCARBONS (PSH)

Depth to PSH (mBTOC): -
PSH Visually Confirmed (Bailer): -
PSH Thickness (mm): -

Field Filtered

Yes (0.45 µm) ☑
No ☐ (Request lab 0.45 µm filter the sample)

PURGE AND SAMPLE

Sampling Method ☐Bladder ☑Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet (mBTOC):
Fill Timer:
Pump Pressure Regulator (psi):
Discharge Timer:
Weather Conditions: Overcast / Rain
Cycle:
Pump on time: 10:30am
Pump off time:

WATER QUALITY PARAMETERS

Probe Make and Model:
Bump Test Date and Time:

Time	Volume (L)	SWL (mbtoc)	Temp (°C)	EC (µS/cm)	Redox (mV)	DO (mg/L)	pH (units)	Comments (colour, turbidity, odour, sheen etc.)
	0.5	2.14	18.55	536	92.4	2.36	5.39	Colourless, no turbid/odour/sheer
	1.0	2.19	18.26	527	102.3	2.39	5.45	" " / /
	1.5	2.24	18.21	519	105.2	2.43	5.51	Light brown, low turb., no odour/sheer
	2.0	2.26	18.19	521	104.7	2.42	5.49	" "
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

SIGNATURE:

Rev 1 20150604SH
Form OP 017

WATER SAMPLING FIELD SHEET

Site Address: 1 Veno St, Heathcote
Job Number: F26160
Client: Duffy, Kennedy
Date: 26/10/23
Field Staff: Sean
Sampling Location ID BH10M
Well Location: SW side
Round No: 1

MEDIUM ☑Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date: 19/10/23
Stick up / down (m): -0.10 (+ above ground - below ground)
Initial Well Depth (mBTOC): 8.9
Screen Interval (mBTOC): 5.9-8.9
Previous Sampling Date: -
Previous SWL (mBTOC): -

PID READINGS

PID Headspace (ppm):
PID Background (ppm): -
PID Breathing Space (ppm): -

PRE PURGE

Total Well Depth (mBTOC): 8.9
Well Head Condition: Good
SWL (mBTOC): 4.43
Water Column (m):

PHASE SEPARATED HYDROCARBONS (PSH)

Depth to PSH (mBTOC): -
PSH Visually Confirmed (Bailer): -
PSH Thickness (mm): -

Field Filtered

Yes (0.45 µm) ☑
No ☐ (Request lab 0.45 µm filter the sample)

PURGE AND SAMPLE

Sampling Method ☐Bladder ☑Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet (mBTOC):
Fill Timer:
Pump Pressure Regulator (psi):
Discharge Timer:
Weather Conditions: Overcast / Rain
Cycle:
Pump on time: 11:15am
Pump off time:

WATER QUALITY PARAMETERS

Probe Make and Model:
Bump Test Date and Time:

Time	Volume (L)	SWL (mbtoc)	Temp (°C)	EC (µS/cm)	Redox (mV)	DO (mg/L)	pH (units)	Comments (colour, turbidity, odour, sheen etc.)
	0.5	4.50	18.64	396	69.7	2.40	5.38	Colourless, low turb, hydrocarbon odour/sheen
	1.0	4.55	18.61	401	75.2	2.59	5.25	" " ,
	1.5	4.57	18.55	405	79.9	2.62	5.36	Grey, med turb, hydrocarbon odour/sheen
	2.0	4.59	18.54	408	81.5	2.65	5.32	" , " " ,
Stabilisation range: **3 consecutive readings**			**±0.2°C**	**±3%**	**±20mV**	**±10%**	**±0.2**	

OTHER COMMENTS/OBSERVATIONS:

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address: 1 VENO ST, HEATHCOTE NSW.
Job Number: E26160
Client: DUFFY KENNEDY
Date: 20/06/2024
Field Staff: JL
Sampling Location ID BH2M - 2
Well Location: NORTHERN PORTION.
Round No: 2

MEDIUM ☑Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date: 16/10/2023
Stick up / [✓ down] (m): - 0.10 (+ above ground - below ground)
Initial Well Depth (mBTOC): 9.10
Screen Interval (mBTOC): 1.1 - 9.1
Previous Sampling Date: 26/10/2023
Previous SWL (mBTOC): 3.23

PID READINGS

PID Headspace (ppm): 0.1
PID Background (ppm): 0.1
PID Breathing Space (ppm): 0.1

PRE PURGE

Total Well Depth (mBTOC): 9.10
Well Head Condition: GOOD.
SWL (mBTOC): 3.18
Water Column (m): 5.98.

PHASE SEPARATED HYDROCARBONS (PSH)

Depth to PSH (mBTOC): —
PSH Visually Confirmed (Bailer): DIPPED
PSH Thickness (mm): —
— NOT IDENTIFIED —

PURGE AND SAMPLE

Sampling Method ☐Bladder ☑Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet (mBTOC):
Fill Timer: —
Pump Pressure Regulator (psi): —
Discharge Timer: —
Weather Conditions: FINE / SUNNY
Cycle: —
Pump on time:
Pump off time:

WATER QUALITY PARAMETERS

Probe Make and Model:
Bump Test Date and Time:

Time	Volume (L)	SWL (mbtoc)	Temp (°C)	EC (µS/cm)	Redox (mV)	DO (mg/L)	pH (units)	Comments (colour, turbidity, odour, sheen etc.)
			20.11	310	-20.2	1.72	6.31	CLEAR / COLOURLESS, LOW TURBIDITY
			20.24	302	-15.1	1.76	6.25	NO ODOUR / SHEEN.
			20.28	298	-13.2	1.78	6.23	
			20.31	296	-11.7	1.79	6.22	
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

• QD240620 + QT240620 OBTAINED FROM WELL.

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address: 1 VENO ST, HEATHCOTE NSW
Job Number: E26160
Client: DUFFY KENNEDY
Date: 20/06/2024
Field Staff: JOEL H.
Sampling Location ID: BH7M-2
Well Location: EASTERN BOUNDARY
Round No: 2

MEDIUM ☑Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date: 18/10/2023
Stick up / [✓ down] (m): 0.10 (+ above ground - below ground)
Initial Well Depth (mBTOC): 8.80
Screen Interval (mBTOC): 5.8 – 8.8
Previous Sampling Date: 26/10/2023
Previous SWL (mBTOC): 2.09

PID READINGS

PID Headspace (ppm): 0.1
PID Background (ppm): 0.1
PID Breathing Space (ppm): 0.1

PRE PURGE

Total Well Depth (mBTOC): —
Well Head Condition: GOOD
SWL (mBTOC): —
Water Column (m):

PHASE SEPARATED HYDROCARBONS (PSH)

Depth to PSH (mBTOC): —
PSH Visually Confirmed (Bailer): —
PSH Thickness (mm): —

PURGE AND SAMPLE

Sampling Method ☐Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet (mBTOC):
Fill Timer:
Pump Pressure Regulator (psi):
Discharge Timer:
Weather Conditions:
Cycle:
Pump on time:
Pump off time:

WATER QUALITY PARAMETERS

Probe Make and Model:
Bump Test Date and Time:

Time	Volume (L)	SWL (mbtoc)	Temp (°C)	EC (μS/cm)	Redox (mV)	DO (mg/L)	pH (units)	Comments (colour, turbidity, odour, sheen etc.)
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

- NO MONITORING COMPLETED
WELL INACCESSIBLE (VEHICLE OVER WELL)

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address: 1 VENO ST, HEATHCOTE NSW
Job Number: E26160
Client: DUFFY KENNEDY
Date: 20/06/2024
Field Staff: JOEL H.
Sampling Location ID BH10M-R
Well Location: SOUTH-WESTERN PORTION.
Round No: 2

MEDIUM ☑Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date: 19/10/2023
Stick up / [✓ down (m)]: 0.10 (+ above ground - below ground)
Initial Well Depth (mBTOC): 8.90
Screen Interval (mBTOC): 5.9 - 8.9
Previous Sampling Date: 26/10/2023
Previous SWL (mBTOC): 4.43.

PID READINGS

PID Headspace (ppm): 0.1
PID Background (ppm): 0.1
PID Breathing Space (ppm): 0.1

PRE PURGE

Total Well Depth (mBTOC): 8.90
Well Head Condition: GOOD.
SWL (mBTOC): 4.10
Water Column (m): 4.8

PHASE SEPARATED HYDROCARBONS (PSH)

Depth to PSH (mBTOC): —
PSH Visually Confirmed (Bailer): CHECKED
PSH Thickness (mm): —
→ NOT IDENTIFIED

PURGE AND SAMPLE

Sampling Method ☐Bladder ☑Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet (mBTOC):
Fill Timer:
Pump Pressure Regulator (psi): /
Discharge Timer:
Weather Conditions: FINE / SUNNY
Cycle:
Pump on time:
Pump off time:

WATER QUALITY PARAMETERS

Probe Make and Model:
Bump Test Date and Time:

Time	Volume (L)	SWL (mbtoc)	Temp (°C)	EC (µS/cm)	Redox (mV)	DO (mg/L)	pH (units)	Comments (colour, turbidity, odour, sheen etc.)
			21.22	422	89.2	4.72	5.61	CLEAR / COLOURLESS, LOW TURBIDITY,
			21.15	417	91.5	4.81	5.55	NO ODOUR / SHEEN.
			21.14	414	92.7	4.84	5.52	
			21.18	411	92.9	4.85	5.52	
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

SIGNATURE: Joel

Rev 1 20150604SH
Form OP 017

C:\Users\jh\Desktop\asd\Field Forms\Water Sampling Field Sheet Rev1 20150604 - BAedit

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address: 1 VENO ST, HEATHCOTE NSW
Job Number: E26160
Client: DUFFY KENNEDY
Date: 20/06/2024
Field Staff: JOEL H.
Sampling Location ID BH17M-1
Well Location: CENTRAL - WEST BOUNDARY,
Round No: 1

MEDIUM ☑Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date: 11/06/2024
Stick up / [✓ down] (m): 0·1 (+ above ground - below ground)
Initial Well Depth (mBTOC): 6.0
Screen Interval (mBTOC): 3.0 - 6.0
Previous Sampling Date: N/A.
Previous SWL (mBTOC): N/A.

PID READINGS

PID Headspace (ppm): 0.2
PID Background (ppm): 0.2
PID Breathing Space (ppm): 0.2

PRE PURGE

Total Well Depth (mBTOC): 6.0
Well Head Condition: GOOD.
SWL (mBTOC): 3.4
Water Column (m): 2.6

PHASE SEPARATED HYDROCARBONS (PSH)

Depth to PSH (mBTOC): —
PSH Visually Confirmed (Bailer): CHECKED — NOT IDENTIFIED.
PSH Thickness (mm): —

PURGE AND SAMPLE

Sampling Method ☐Bladder ☑Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet (mBTOC):
Fill Timer:
Pump Pressure Regulator (psi):
Discharge Timer:
Weather Conditions: FINE / SUNNY
Cycle:
Pump on time:
Pump off time:

WATER QUALITY PARAMETERS

Probe Make and Model:
Bump Test Date and Time:

Time	Volume (L)	SWL (mbtoc)	Temp (°C)	EC (μS/cm)	Redox (mV)	DO (mg/L)	pH (units)	Comments (colour, turbidity, odour, sheen etc.)
			19.51	512	110.1	3.11	4.91	CLEAR / COLOURLESS, LOW TURBIDITY,
			19.50	505	112.2	3.17	4.85	NO ODOUR / SHEEN.
			19.44	499	113.4	3.22	4.82	
			19.42	495	115.7	3.25	4.81	
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

SIGNATURE:

Appendix G – Chain of Custody and Sample Receipt Documentation

Sheet 1 of 1

Site:
1 Veno Street, Heathcote NSW

Project No:
E26160

Laboratory:

Envirolab Services
12 Ashley Street,
CHATSWOOD NSW 2067
P: 02 9910 6200

Sample ID	Laboratory ID	Container Type	Sampling		Sample Matrix				Analysis																		
			Date	Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM ᴬ /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM ᴬ /TRH/PAHs	HM ᴬ /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	Excavated Natural Material (ENM) Suite	Dewatering Suite	pH / pH peroxide	sPOCAS	Chromium Reducible Sulfur (CrS)	PFAS	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride	HOLD		TCLP HM ᴮ / PAH
QT1_20240606	2	J	6/06/2024	AM	X						X																

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 358462
Date Received: 7/6/24
Time Received: 1510
Received By: CW
Temp: [✓ Cool]/Ambient
Cooling: Ice/[✓ Icepack]
Security: [✓ Intact]/Broken/None

Comments

HM ᴬ
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM ᴮ
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND

☒ Standard
☐ 24 Hours
☐ 48 Hours
☐ 72 Hours
☐ Other____

Container Type:
J = solvent washed, acid rinsed, Teflon sealed glass jar
S = solvent washed, acid rinsed glass bottle
P = natural HDPE plastic bottle
VC = glass vial, Teflon Septum
ZLB = Zip-Lock Bag

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table ☐

Sampler's Name (EI): Sharon/ Chiho	Received by (Envirolab):
Print Sean Nolan	*Print*
Signature SN	*Signature*
Date 6/06/2024	*Date*

Sampler's Comments:
Please CC Sean

SE266428.
ATC6983
7-6-24

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au

eiaustralia
Contamination | Remediation | Geotechnical

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

COC June 2021 FORM v.5 - Envirolab

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200   fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details	
Client	EI Australia
Attention	Lab Email

Sample Login Details	
Your reference	E26160 - 1 Veno Street, Heathcote
Envirolab Reference	353462
Date Sample Received	07/06/2024
Date Instructions Received	07/06/2024
Date Results Expected to be Reported	17/06/2024

Sample Condition	
Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	1 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	8
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	Acid Extractable metalsin soil
QT1_20240606	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info
Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Sheet 1 of 1

Site: 1 VENO ST HEATHCOTE NSW

Project No: E26160

Laboratory:

Envirolab Services
12 Ashley Street,
CHATSWOOD NSW 2067
P: 02 9910 6200

			Sampling		Sample Matrix				Analysis																		
Sample ID	Laboratory ID	Container Type	Date	Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM A /TRH/BTEX/PAHs	HM A /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	Excavated Natural Material (ENM) Suite	Dewatering Suite	pH / pH peroxide	sPOCAS	Chromium Reducible Sulfur (CrS)	PFAS	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride			TCLP HM B / PAH
① QT240620		S, P VC x2	20/6/24			/	/				/																

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 354460

Date Received: 20/6/24
Time Received: 1500
Received By: VW
Temp: [✓ Cool]/Ambient 10°C
Cooling: Ice/[✓ Icepack]
Security: [✓ Intact]/Broken/None

Comments

HM A
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM B
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND

☐ Standard
☐ 24 Hours
☐ 48 Hours
☑ 72 Hours
☐ Other______

Container Type:
J = solvent washed, acid rinsed, Tefton sealed glass jar
S = solvent washed, acid rinsed glass bottle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Sampler's Name (EI):	Received by (Envirolab):
Print JOEL HEININGER	Print Katy Wayne
Signature Joel Heininger	Signature
Date 20/06/24	Date 20/6/24 1500

Report with EI Waste Classification Table ☐

Sampler's Comments:

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au

eiaustralia
Contamination Remediation | Geotechnical

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

COC June 2021 FORM v.5 - Envirolab

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200   fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	EI Australia
Attention	Joel Heininger

Sample Login Details

Your reference	E26160
Envirolab Reference	354460
Date Sample Received	20/06/2024
Date Instructions Received	20/06/2024
Date Results Expected to be Reported	25/06/2024

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	1 Water
Turnaround Time Requested	3 days
Temperature on Receipt (°C)	10
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Sample ID	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	HM in water - dissolved
QT240620	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Additional Info
Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Sheet 1 of 2

Site: 1 Vero St, Heathcote

Project No: E26160

Laboratory:

SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling		Sample Matrix				Analysis																			
			Date	Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM ^{A} /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM ^{A} /TRH/BTEX/PAHs	HM ^{A} /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification (500ml)	Asbestos 10L field screening	Excavated Natural Material (ENM) Suite	ENM Suite - Stockpile discrete (TRH/BTEX/PAHs)	ENM Suite - Stockpile composite (HM ^{A} /pH / EC / Foreign Materials)	Dewatering Suite	pH / pH peroxide	sPOCAS	Chromium Reducible Sulfur (CrS)	PFAS	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride	~~Lead~~ HOLD	TCLP HM ^{B} / PAH
BH11_0.2-0.3	1	J, ZLB	6/6/24	AM	X				X																				
BH11_0.6-0.7	2	J								X																			
BH12_0.1-0.2	3	J, ZLB							X																				
BH12_0.4-05		J																										X	
BH13_0.1-0.2	4	J, ZLB							X																				
BH13_0.5-0.7	5	J								X																			
BH14_0.1-0.2	6	J, ZLB							X																				
BH14_0.5-0.6	7	J								X																			
BH15_0.2-0.3	8	J, ZLB							X																				
BH15_0.6-0.7	9	J								X																			
BH16_0.2-0.3	10	J, ZLB							X																				
BH16_0.7-0.8		J	↓	↓	↓																								X	

Comments

HM ^{A}
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM ^{B}
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND
☑ Standard
☐ 24 Hours
☐ 48 Hours
☐ 72 Hours
☐ Other______

SGS EHS Sydney COC
SE266428

Container Type:
J = solvent washed, acid rinsed, Tefton sealed glass jar
S = solvent washed, acid rinsed glass botlle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag BB = Bulk Bag

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Sampler's Name (EI):	Received by (SGS):
Print Sean Nolan	Print M Bousan
Signature	Signature
Date 6/6/24	Date 7.6.24 9:00

Report with EI Waste Classification Table ☐

Sampler's Comments:

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au , Sean.

eiaustralia
Contamination | Remediation | Geotechnical

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

COC June 2021 FORM v.5 - SGS

Sheet 2 of 2

Site: 1 Vero St, Heathcote

Project No: E26160

Laboratory:

SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM ^{A} /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM ^{A} /TRH/BTEX/PAHs	HM ^{A} /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification (500ml)	Asbestos 10L field screening	Excavated Natural Material (ENM) Suite	ENM Suite - Stockpile discrete (TRH/BTEX/PAHs)	ENM Suite - Stockpile composite (HM ^{A} /pH / EC / Foreign Materials)	Dewatering Suite	pH / pH peroxide	sPOCAS	Chromium Reducible Sulfur (CrS)	PFAS	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride	Lead	TCLP HM ^{B} / PAH
BH17_0.2-0.3	11	J, ZLB	6/6/24	AM	X				X																				
BH17_0.5-0.6	12	J			X					X																			
QD_20240606	13	J			X						X																		
QR_20240606	14	S, VC/4				X	X				X																		
TB	15	VC			X							X																	
TS	16	VC			X							X																	

Comments

HM ^{A}
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM ^{B}
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND

☑ Standard
☐ 24 Hours
☐ 48 Hours
☐ 72 Hours
☐ Other______

Container Type:
J = solvent washed, acid rinsed, Tefton sealed glass jar
S = solvent washed, acid rinsed glass bottle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag BB = Bulk Bag

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table ☐

Sampler's Name (EI):
Print Sean Dolan
Signature
Date 6/6/24

Received by (SGS):
Print M Bova
Signature
Date 7.6.24 9:00

Sampler's Comments:
* Please send QT_20240606 to envirolab. COC attached.

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au, sean.

eiaustralia
Contamination | Remediation | Geotechnical

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

SAMPLE RECEIPT ADVICE

SE266428

CLIENT DETAILS

Contact	Sean Nolan
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	sean.nolan@eiaustralia.com.au
Project	**E26160 1 Veno St, Heathcote**
Order Number	**E26160**
Samples	16

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Fri 7/6/2024
Report Due	Mon 17/6/2024
SGS Reference	**SE266428**

SUBMISSION DETAILS

This is to confirm that 16 samples were received on Friday 7/6/2024. Results are expected to be ready by COB Monday 17/6/2024. Please quote SGS reference SE266428 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	15 Soil, 1 Water	Type of documentation received	COC
Date documentation received	7/6/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	15.5°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

2 Soil samples have been placed on hold as no tests have been assigned for them by the client. These samples will not be processed.

SAMPLE RECEIPT ADVICE

SE266428

CLIENT DETAILS

Client EI AUSTRALIA

Project E26160 1 Veno St, Heathcote

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP 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	BH11_0.2-0.3	30	14	26	11	7	10	11	7
002	BH11_0.6-0.7	-	-	26	-	7	10	11	7
003	BH12_0.1-0.2	30	14	26	11	7	10	11	7
004	BH13_0.1-0.2	30	14	26	11	7	10	11	7
005	BH13_0.5-0.7	-	-	26	-	7	10	11	7
006	BH14_0.1-0.2	30	14	26	11	7	10	11	7
007	BH14_0.5-0.6	-	-	26	-	7	10	11	7
008	BH15_0.2-0.3	30	14	26	11	7	10	11	7
009	BH15_0.6-0.7	-	-	26	-	7	10	11	7
010	BH16_0.2-0.3	30	14	26	11	7	10	11	7
011	BH17_0.2-0.3	30	14	26	11	7	10	11	7
012	BH17_0.5-0.6	-	-	26	-	7	10	11	7
013	QD_20240606	-	-	-	-	7	10	11	7
015	TB	-	-	-	-	-	-	11	-
016	TS	-	-	-	-	-	-	11	-

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

SE266428

CLIENT DETAILS

Client	EI AUSTRALIA	Project	E26160 1 Veno St, Heathcote

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content
001	BH11_0.2-0.3	3	1	1
002	BH11_0.6-0.7	-	1	1
003	BH12_0.1-0.2	3	1	1
004	BH13_0.1-0.2	3	1	1
005	BH13_0.5-0.7	-	1	1
006	BH14_0.1-0.2	3	1	1
007	BH14_0.5-0.6	-	1	1
008	BH15_0.2-0.3	3	1	1
009	BH15_0.6-0.7	-	1	1
010	BH16_0.2-0.3	3	1	1
011	BH17_0.2-0.3	3	1	1
012	BH17_0.5-0.6	-	1	1
013	QD_20240606	-	1	1
015	TB	-	-	1

CONTINUED OVERLEAF

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

SAMPLE RECEIPT ADVICE

CLIENT DETAILS

Client EI AUSTRALIA

Project E26160 1 Veno St, Heathcote

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
014	QR_20240606	1	7	9	11	7

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

Yin, Emily (Alexandria)

From: AU.Environmental.Sydney, AU (Sydney)
Sent: Tuesday, 18 June 2024 1:34 PM
To: Joel Heininger - EIAustralia
Cc: Sean Nolan - EI Australia; AU.Environmental.Sydney, AU (Sydney); AU.SampleReceipt.Sydney, AU (Sydney)
Subject: RE: [EXTERNAL] RE: Report Job SE266428, your reference E26160 1 Veno St, Heathcote, order number E26160

Hi Joel.

No worries. We'll get both this and SE266429 as per your earlier email booked in for additional testing jobs, 2 day TAT. Hope this helps.

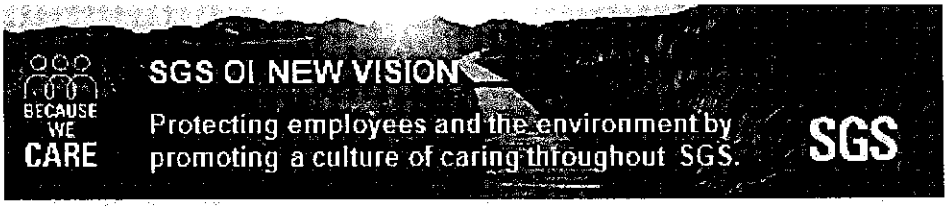
Matthew Tyler
Industries & Environment
Client Services Officer

SGS Australia Pty Ltd
Unit 16, 33 Maddox St
Alexandria NSW 2015

Phone: +61 2 8594 0400
Email: matthew.tyler@sgs.com
Visit: https://www.sgs.com/en-au

SGS EHS Alexandria Laboratory
SE266428A COC
Received: 18-Jun-2024

How did we go? Your feedback helps us to improve.



From: Joel Heininger - EIAustralia <joel.heininger@eiaustralia.com.au>
Sent: Tuesday, June 18, 2024 1:29 PM
To: AU.Environmental.Sydney, AU (Sydney) <AU.Environmental.Sydney@SGS.com>
Cc: Sean Nolan - EI Australia <sean.nolan@eiaustralia.com.au>
Subject: [EXTERNAL] RE: Report Job SE266428, your reference E26160 1 Veno St, Heathcote, order number E26160

Good-afternoon SGS,

Could we please request some additional analysis as follows:

Sample ID	Analysis	Turnaround
BH12_0.1-0.2	TCLP – Nickel	48 hour
BH14_0.1-0.2		

SAMPLE RECEIPT ADVICE

SE266428A

CLIENT DETAILS

Contact	Sean Nolan
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	sean.nolan@eiaustralia.com.au
Project	**E26160 1 Veno St, Heathcote-Additional**
Order Number	**E26160**
Samples	16

LABORATORY DETAILS

Manager	Shane McDermott
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Tue 18/6/2024
Report Due	Thu 20/6/2024
SGS Reference	**SE266428A**

SUBMISSION DETAILS

This is to confirm that 16 samples were received on Tuesday 18/6/2024. Results are expected to be ready by COB Thursday 20/6/2024. Please quote SGS reference SE266428A when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	2 Soil	Type of documentation received	Email
Date documentation received	18/6/2024@1:29pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	15.5°C
Sample container provider	SGS	Turnaround time requested	Two Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

COMMENTS

SAMPLE RECEIPT ADVICE

SE266428A

CLIENT DETAILS

Client EI AUSTRALIA

Project E26160 1 Veno St, Heathcote-Additional

SUMMARY OF ANALYSIS

No.	Sample ID	Metals in TCLP Extract by ICPOES	TCLP (Toxicity Characteristic Leaching
003	BH12_0.1-0.2	1	6
006	BH14_0.1-0.2	1	6

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
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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 .

Sheet 1 of 1

Site: 1 Vero St, Heathcote

Project No: E26160

Laboratory:

SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling		Sample Matrix				Analysis																				
			Date	Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM^A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM^A /TRH/BTEX/PAHs	HM^A /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification (500ml)	Asbestos 10L field screening	Excavated Natural Material (ENM) Suite	ENM Suite - Stockpile discrete (TRH/BTEX/PAHs)	ENM Suite - Stockpile composite (HM^A /pH / EC / Foreign Materials)	Dewatering Suite	pH / pH peroxide	sPOCAS	Chromium Reducible Sulfur (CrS)	PFAS	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride	Lead	TCLP HM^B / PAH
BH7M_DL1_0.1-0.2	1	J, ZLB	6/6/24	AM	X				X																				
BH7M_DL2_0.2-0.3	2	↓	↓	↓	X				X																				
BH7M_DL3_0.1-0.2	3	↓	↓	↓	X				X																				

SGS EHS Sydney COC
SE266429

Comments

HM^A
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM^B
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND
☑ Standard
☐ 24 Hours
☐ 48 Hours
☐ 72 Hours
☐ Other______

Container Type:
J = solvent washed, acid rinsed, Teflon sealed glass jar
S = solvent washed, acid rinsed glass bottle
P = natural HDPE plastic bottle
VC = glass vial, Teflon Septum
ZLB = Zip-Lock Bag BB = Bulk Bag

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table ☐

Sampler's Name (EI):
Print Sean Dolan
Signature
Date 6/6/24

Received by (SGS):
Print G.F
Signature
Date 7-6-24 9:00

Sampler's Comments:

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au, sean.

eiaustralia
Contamination | Remediation | Geotechnical

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

COC June 2021 FORM v.5 - SGS

SAMPLE RECEIPT ADVICE

SE266429

CLIENT DETAILS

Contact	Sean Nolan
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	sean.nolan@eiaustralia.com.au
Project	**E26160 1 Veno St Heathcote**
Order Number	**E26160**
Samples	3

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Fri 7/6/2024
Report Due	Mon 17/6/2024
SGS Reference	**SE266429**

SUBMISSION DETAILS

This is to confirm that 3 samples were received on Friday 7/6/2024. Results are expected to be ready by COB Monday 17/6/2024. Please quote SGS reference SE266429 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	3 Soil	Type of documentation received	COC
Date documentation received	7/6/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	15.5°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

COMMENTS

SAMPLE RECEIPT ADVICE

CLIENT DETAILS

Client EI AUSTRALIA

Project E26160 1 Veno St Heathcote

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP 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	BH7M_DL1_0.1-0.2	30	14	26	11	7	10	11	7
002	BH7M_DL2_0.2-0.3	30	14	26	11	7	10	11	7
003	BH7M DL3 0.1-0.2	30	14	26	11	7	10	11	7

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
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Testing as per this table shall commence immediately unless the client intervenes with a correction .

SAMPLE RECEIPT ADVICE

CLIENT DETAILS

Client EI AUSTRALIA

Project E26160 1 Veno St Heathcote

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content
001	BH7M_DL1_0.1-0.2	3	1	1
002	BH7M_DL2_0.2-0.3	3	1	1
003	BH7M DL3 0.1-0.2	3	1	1

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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 .

Yin, Emily (Alexandria)

From:	AU.Environmental.Sydney, AU (Sydney)
Sent:	Tuesday, 18 June 2024 1:32 PM
To:	AU.SampleReceipt.GBS, AU (Alexandria)
Cc:	AU.SampleReceipt.Sydney, AU (Sydney); AU.Environmental.Sydney, AU (Sydney)
Subject:	FW: [EXTERNAL] RE: Report Job SE266429, your reference E26160 1 Veno St Heathcote, order number E26160

Hi GBS team.

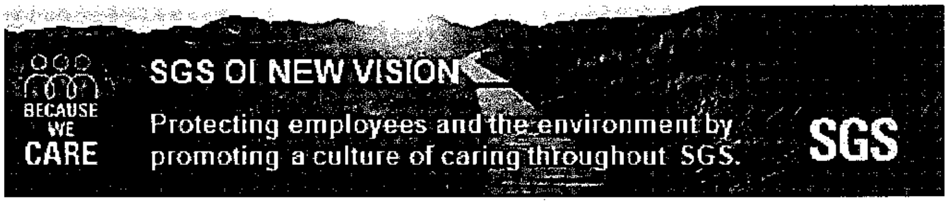
Please book in A job, 2 day TAT.
Thanks.

Matthew Tyler
Industries & Environment
Client Services Officer

SGS Australia Pty Ltd
Unit 16, 33 Maddox St
Alexandria NSW 2015

Phone: +61 2 8594 0400
Email: matthew.tyler@sgs.com
Visit: https://www.sgs.com/en-au

How did we go? Your feedback helps us to improve.



From: Joel Heininger - EIAustralia <joel.heininger@eiaustralia.com.au>
Sent: Tuesday, June 18, 2024 1:25 PM
To: AU.Environmental.Sydney, AU (Sydney) <AU.Environmental.Sydney@SGS.com>
Cc: Sean Nolan - EI Australia <sean.nolan@eiaustralia.com.au>
Subject: [EXTERNAL] RE: Report Job SE266429, your reference E26160 1 Veno St Heathcote, order number E26160

Good-afternoon SGS,

Could you please analyse BH7M_DL2_0.2-0.3 for TCLP-Nickel?
48 hour turn-around please.

Kind regards,

SAMPLE RECEIPT ADVICE

SE266429A

CLIENT DETAILS

Contact	Sean Nolan
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	sean.nolan@eiaustralia.com.au
Project	**E26160 1 Veno St Heathcote -Additional**
Order Number	**E26160**
Samples	3

LABORATORY DETAILS

Manager	Shane McDermott
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Tue 18/6/2024
Report Due	Thu 20/6/2024
SGS Reference	**SE266429A**

SUBMISSION DETAILS

This is to confirm that 3 samples were received on Tuesday 18/6/2024. Results are expected to be ready by COB Thursday 20/6/2024.
Please quote SGS reference SE266429A when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	1 Soil	Type of documentation received	Email
Date documentation received	18/6/2024@1:25pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	15.5°C
Sample container provider	SGS	Turnaround time requested	Two Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

COMMENTS

SGS

SAMPLE RECEIPT ADVICE

CLIENT DETAILS

Client EI AUSTRALIA

Project E26160 1 Veno St Heathcote -Additional

SUMMARY OF ANALYSIS

No.	Sample ID	Metals in TCLP Extract by ICPOES	TCLP (Toxicity Characteristic Leaching
002	BH7M_DL2_0.2-0.3	1	6

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
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SGS EHS Sydney COC
SE267083

Sheet 1 of 1

Site: 1 VENO STREET, HEATHCOTE NSW

Project No: E26160

Laboratory:

SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling		Sample Matrix				alysis																					
			Date	Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM ^A /TRH/BTEX/PAHs	HM ^A /TRH/BTEX	BTEX	VOCs	PFAS	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	OC Pesticides	OP Pesticides	PCBs	Total Phenols	Dewatering Suite	DPIE Suite - Mandatory Parameters	REDOX POTENTIAL	DISSOLVED OXYGEN						
BH2M-2	1	S P VC	20/6/24			✓	✓		✓			✓			✓				✓			✓	✓						
BH10M-2	2					✓	✓					✓							✓		✓								
BH17M-1	3					✓	✓		✓			✓			✓				✓			✓	✓						
QD240620	4					✓	✓			✓																			
QR240620	5					✓				✓																			
QTS 240620	6	VC	LAB PREPARED			✓					✓											8.5 CP							
QTB 240620	7	VC				✓					✓																		

Comments

HM ^A
As, Cd, Cr, Cu, Pb, Hg, Ni, Zn

DPIE Suite - Mandatory Parameters
pH & EC
Major Anions / Major Cations
Alkalinity (bicarbonate, carbonate, hydroxide & total)
RedOx potential
TDS / NTU / TSS / TOC / SAR
Dissolved Oxygen
Hardness
Metals (Al, Sb, As, Ba, Be, B, Cd, Cr, Co, Cu, Fe, Pb, Li, Mn, Hg, Mo, Ni, Se, Si, Ag, Sr, U, V, Zn)
Nitrogen and Phosphorous
E. Coli / F. Coliforms / F. Strep
TRH / BTEXN/ PAH

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND

☐ Standard
☐ 24 Hours
☐ 48 Hours
☑ 72 Hours
☐ Other____

Container Type:
J = solvent washed, acid rinsed, Tefton sealed glass jar
S = solvent washed, acid rinsed glass bottle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag BB = Bulk Bag

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table ☐

Sampler's Name (EI):
Print JOEL HEININGER
Signature
Date 20/06/2024

Received by (SGS):
Print
Signature
Date 20/6/24 3:15 pm

Sampler's Comments:
DPIE Suite Quote Reference: EI AU - IE - DEC 23 - 231011MK

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au

eiaustralia

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

COC June 2021 FORM v.5 - SGS

SAMPLE RECEIPT ADVICE

SE267083

CLIENT DETAILS

Contact	Joel Heininger
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	joel.heininger@eiaustralia.com.au
Project	**E26160 1 Veno Street Heathcote NSW**
Order Number	**E26160**
Samples	7

LABORATORY DETAILS

Manager	Shane McDermott
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Thu 20/6/2024
Report Due	Tue 25/6/2024
SGS Reference	**SE267083**

SUBMISSION DETAILS

This is to confirm that 7 samples were received on Thursday 20/6/2024. Results are expected to be ready by COB Tuesday 25/6/2024. Please quote SGS reference SE267083 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Type of documentation received	COC	Date documentation received	20/06/2024
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	8.5°C	Sample container provider	SGS
Turnaround time requested	Three Days	Samples received in correct containers	Yes
Sufficient sample for analysis	Yes	Sample cooling method	Ice Bricks
Samples clearly labelled	Yes	Complete documentation received	Yes

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

COMMENTS

Micros subcontracted to Symbio Laboratories, 2 Sirius Road, Lane Cove West NSW 2066, NATA Accreditation Number 2455.

SAMPLE RECEIPT ADVICE

CLIENT DETAILS

Client EI AUSTRALIA

Project E26160 1 Veno Street Heathcote NSW

SUMMARY OF ANALYSIS

No.	Sample ID	Anions by Ion Chromatography in Water	Nitrite in Water	PAH (Polynuclear Aromatic Hydrocarbons) in Water	TKN Kjeldahl Digestion by Discrete Analyser	Total Phenolics in Water	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
001	BH2M-2	-	-	22	-	1	9	77	7
002	BH10M-2	3	2	22	2	1	9	77	7
003	BH17M-1	-	-	22	-	1	9	77	7
004	QD240620	-	-	-	-	-	9	11	7
005	QR240620	-	-	-	-	-	9	11	7
006	QTS240620	-	-	-	-	-	-	11	-
007	QTB240620	-	-	-	-	-	-	11	-

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

CLIENT DETAILS

Client EI AUSTRALIA

Project E26160 1 Veno Street Heathcote NSW

SUMMARY OF ANALYSIS

No.	Sample ID	Alkalinity	Ammonia Nitrogen by Discrete Analyser	Conductivity and TDS by Calculation - Water	Dissolved Oxygen by Membrane Electrode	Filterable Reactive Phosphorus (FRP)	Forms of Carbon	pH in water	Total and Volatile Suspended Solids (TSS /	Total Dissolved Solids (TDS) in water	Total Phosphorus by Kjeldahl Digestion DA in
001	BH2M-2	-	-	2	2	-	-	1	-	-	-
002	BH10M-2	7	1	2	2	1	1	1	1	1	1
003	BH17M-1	-	-	2	2	-	-	1	-	-	-

CONTINUED OVERLEAF

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

SAMPLE RECEIPT ADVICE

CLIENT DETAILS

Client EI AUSTRALIA

Project E26160 1 Veno Street Heathcote NSW

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	Metals in Water (Dissolved) by ICPOES	Redox Potential (Eh) in water	Trace Metals (Dissolved) in Water by ICPMS	Turbidity
001	BH2M-2	1	-	2	7	-
002	BH10M-2	1	8	2	21	1
003	BH17M-1	1	-	2	7	-
004	QD240620	1	-	-	7	-
005	QR240620	1	-	-	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

SE267083

CLIENT DETAILS

Client EI AUSTRALIA

Project E26160 1 Veno Street Heathcote NSW

SUMMARY OF ANALYSIS

No.	Sample ID	Sample Subcontracted
002	BH10M-2	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 .

Sheet 1 of 1

Site: 1 Veno St, Heathcote

Project No: E26160

Laboratory:

Envirolab Services
12 Ashley Street,
CHATSWOOD NSW 2067
P: 02 9910 6200

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM ^{A} /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM ^{A} /TRH/BTEX/PAHs	HM ^{A} /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	Excavated Natural Material (ENM) Suite	Dewatering Suite	pH / pH peroxide	sPOCAS	Chromium Reducible Sulfur (CrS)	PFAS	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride			TCLP HM ^{B} / PAH
1 QT_20231017		J	17/10	PM	X						X																

Comments

HM ^{A}
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM ^{B}
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND

☑ Standard
☐ 24 Hours
☐ 48 Hours
☐ 72 Hours
☐ Other________

Container Type:
J = solvent washed, acid rinsed, Teflon sealed glass jar
S = solvent washed, acid rinsed glass bottle
P = natural HDPE plastic bottle
VC = glass vial, Teflon Septum
ZLB = Zip-Lock Bag

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table ☐

Sampler's Name (EI):
Print Sean Nolan
Signature
Date 18/10

Received by (Envirolab):
Print
Signature
Date

Sampler's Comments:

eiaustralia
Contamination | Remediation | Geotechnical

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

COC June 2021 FORM v.5 - Envirolab

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 335745
Date Received: 19/10/23
Time Received: 16:30
Received By: HB
Temp: [✓ Cool]/Ambient
Cooling: Ice/[✓ Icepack]
Security: Intact/Broken/[✓ None]

Sheet 1 of 1

Site: 1 Veno St, Heathcote

Project No: E26160

Laboratory:

Envirolab Services
12 Ashley Street,
CHATSWOOD NSW 2067
P: 02 9910 6200

			Sampling		Sample Matrix				Analysis																	
Sample ID	Laboratory ID	Container Type	Date	Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM ^{A} /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM ^{A} /TRH/BTEX/PAHs	HM ^{A} /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	Excavated Natural Material (ENM) Suite	Dewatering Suite	pH / pH peroxide	sPOCAS	Chromium Reducible Sulfur (CrS)	PFAS	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride		TCLP HM ^{B} / PAH
GWQT_20231026	①	S, P, VC	26/10/23	AM		X					X															

Comments

HM ^{A}
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM ^{B}
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND

☑ Standard
☐ 24 Hours
☐ 48 Hours
☐ 72 Hours
☐ Other______

Container Type:
J = solvent washed, acid rinsed, Tefton sealed glass jar
S = solvent washed, acid rinsed glass bottle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Sampler's Name (EI):	Received by (Envirolab):
Print Sean Nolan	Print
Signature	Signature
Date 26/10/23	Date 27/10/23

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au Sean

Report with EI Waste Classification ☐

Sampler's Comments:

Envirolab Services
ENVIROLAB
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 336423
Date Received: 27/10/23
Time Received: 1630
Received By: N
Temp: Cool/Ambient 4C
Cooling: Ice/Icepack
Security: Intact/Broken/None

eiaustralia
Contamination | Remediation | Geotechnical

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

COC June 2021 FORM v.5 - Envirolab

Sheet 1 of 2

Site: 1 Vero St, Heathcote

Project No: E26160

Laboratory:

SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM ^A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM ^A /TRH/BTEX/PAHs	HM ^A /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	Excavated Natural Material (ENM) Suite	ENM Suite - Stockpile discrete (TRH/BTEX/PAHs)	ENM Suite - Stockpile composite (HM ^A /pH / EC / Foreign Materials)	Dewatering Suite	pH / pH peroxide	sPOCAS	Chromium Reducible Sulfur (CrS)	PFAS	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride	Lead	TCLP HM ^B / PAH
BH1_0.2-0.3	1	J, ZLB	18/10	AM	X				X																			
BH2_0.2-0.3	2	J, ZLB			X				X																			
BH3_0.3-0.4	3	J, ZLB			X				X																			
BH3_0.7-0.8	4	J			X					X																		
BH4_0.3-0.4	5	J, ZLB			X				X																			
BH4_0.6-0.7	6	J			X					X																		
BH5_0.3-0.4	7	J, ZLB			X				X																			
BH5_0.8-0.9	8	J			X					X																		
BH6_0.2-0.3	9	J, ZLB			X				X																			
BH7_0.2-0.3	10	J, ZLB			X				X																			
BH7_0.5-0.6	11	J			X					X																		
BH8_0.1-0.2	12	J, ZLB			X				X																			

SGS EHS Sydney COC
SE255412

Comments

HM ^A
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM ^B
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND
☑ Standard
☐ 24 Hours
☐ 48 Hours
☐ 72 Hours
☐ Other____

Container Type:
J = solvent washed, acid rinsed, Teflon sealed glass jar
S = solvent washed, acid rinsed glass botlle
P = natural HDPE plastic bottle
VC = glass vial, Teflon Septum
ZLB = Zip-Lock Bag BB = Bulk Bag

eiaustralia

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

COC June 2021 FORM v.5 - SGS

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table ☐

Sampler's Name (EI):
Print Sean Nolan
Signature
Date 18/10/23

Received by (SGS):
Print M, Bowson
Signature
Date 19.10.23 10:30

Sampler's Comments:
Please send QT-20231017 to envirolab. Separate COC attached.

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au, sean

Sheet 2 of 2

Site: 1 Vero St, Heathcote

Project No: E26160

Laboratory:

SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM ^{A} /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM ^{A} /TRH/BTEX/PAHs	HM ^{A} /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	Excavated Natural Material (ENM) Suite	ENM Suite - Stockpile discrete (TRH/BTEX/PAHs)	ENM Suite - Stockpile composite (HM ^{A} /pH / EC / Foreign Materials)	Dewatering Suite	pH / pH peroxide	sPOCAS	Chromium Reducible Sulfur (CrS)	~~PFAS~~ HOLD	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride	Lead	TCLP HM ^{B} / PAH
BH9_0.1-0.2	13	J, ZLB	18/10	PM	X				X																			
BH10_02-0.3	14	J	18/10		X					X																		
BH10_0.5-06	15	J, ZLB	18/10		X				X																			
BH1_0.5-0.6		J	18/10		X																		X					
BH2M_0.5-0.6		J	18/10		X																		X					
BH6_0.6-0.7		J	18/10		X																		X					
BH8-0.4-0.5		J	18/10		X																		X					
BH9_0.7-0.8		J	18/10		X																		X					
QD_20231017	16	J	18/10								X																	
QR_20231017	17	S, P, VC	18/10								X																	
QTB1	18	VC										X																
QTS1	19	VC										X																

Comments

HM ^{A}
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM ^{B}
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND
☑ Standard
☐ 24 Hours
☐ 48 Hours
☐ 72 Hours
☐ Other_____

Container Type:
J = solvent washed, acid rinsed, Teflon sealed glass jar
S = solvent washed, acid rinsed glass bottle
P = natural HDPE plastic bottle
VC = glass vial, Teflon Septum
ZLB = Zip-Lock Bag BB = Bulk Bag

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table ☐

Sampler's Name (EI):	Received by (SGS):
Print Sean Nolan	Print M. Bols [illegible]
Signature	Signature
Date 18/10/23	Date 19.10.23 10:30

Sampler's Comments:

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au, sean

eiaustralia
Contamination | Remediation | Geotechnical

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

COC June 2021 FORM v 5 - SGS

SAMPLE RECEIPT ADVICE

SE255412

CLIENT DETAILS

Contact	Sean Nolan
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	sean.nolan@eiaustralia.com.au
Project	**E26160 1 Veno St, Heathcote**
Order Number	**E26160**
Samples	19

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Thu 19/10/2023
Report Due	Thu 26/10/2023
SGS Reference	**SE255412**

SUBMISSION DETAILS

This is to confirm that 19 samples were received on Thursday 19/10/2023. Results are expected to be ready by COB Thursday 26/10/2023. Please quote SGS reference SE255412 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	18 Soil, 1 Water	Type of documentation received	COC
Date documentation received	19/10/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	13.5°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

5 Soil samples have been placed on hold as no tests have been assigned for them by the client. These samples will not be processed.

SAMPLE RECEIPT ADVICE

CLIENT DETAILS

Client EI AUSTRALIA

Project E26160 1 Veno St, Heathcote

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP 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	BH1_0.2-0.3	30	14	26	11	7	10	11	7
002	BH2_0.2-0.3	30	14	26	11	7	10	11	7
003	BH3_0.3-0.4	30	14	26	11	7	10	11	7
004	BH3_0.7-0.8	-	-	26	-	7	10	11	7
005	BH4_0.3-0.4	30	14	26	11	7	10	11	7
006	BH4_0.6-0.7	-	-	26	-	7	10	11	7
007	BH5_0.3-0.4	30	14	26	11	7	10	11	7
008	BH5_0.8-0.9	-	-	26	-	7	10	11	7
009	BH6_0.2-0.3	30	14	26	11	7	10	11	7
010	BH7_0.2-0.3	30	14	26	11	7	10	11	7
011	BH7_0.5-0.6	-	-	26	-	7	10	11	7
012	BH8_0.1-0.2	30	14	26	11	7	10	11	7
013	BH9_0.1-0.2	30	14	26	11	7	10	11	7
014	BH10_0.2-0.3	-	-	26	-	7	10	11	7
015	BH10_0.5-0.6	30	14	26	11	7	10	11	7
016	QD_20231017	-	-	-	-	7	10	11	7
018	QTB1	-	-	-	-	-	-	11	-
019	QTS1	-	-	-	-	-	-	11	-

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

SE255412

CLIENT DETAILS

Client EI AUSTRALIA

Project E26160 1 Veno St, Heathcote

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content
001	BH1_0.2-0.3	2	1	1
002	BH2_0.2-0.3	2	1	1
003	BH3_0.3-0.4	2	1	1
004	BH3_0.7-0.8	-	1	1
005	BH4_0.3-0.4	2	1	1
006	BH4_0.6-0.7	-	1	1
007	BH5_0.3-0.4	2	1	1
008	BH5_0.8-0.9	-	1	1
009	BH6_0.2-0.3	2	1	1
010	BH7_0.2-0.3	2	1	1
011	BH7_0.5-0.6	-	1	1
012	BH8_0.1-0.2	2	1	1
013	BH9_0.1-0.2	2	1	1
014	BH10_0.2-0.3	-	1	1
015	BH10_0.5-0.6	2	1	1
016	QD_20231017	-	1	1
018	QTB1	-	-	1

CONTINUED OVERLEAF

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

SAMPLE RECEIPT ADVICE

SE255412

CLIENT DETAILS

Client	EI AUSTRALIA	Project	E26160 1 Veno St, Heathcote

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
017	QR_20231017	1	7	9	11	7

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

Yin, Emily (Sydney)

From: Sean Nolan - EI Australia <sean.nolan@eiaustralia.com.au>
Sent: Wednesday, 1 November 2023 11:06 AM
To: AU.Environmental.Sydney, AU (Sydney); AU.SampleReceipt.Sydney, AU (Sydney)
Cc: Joel Heininger - EIAustralia
Subject: [EXTERNAL] RE: Report Job SE255412, your reference E26160 1 Veno St, Heathcote, order number E26160

Follow Up Flag: Follow up
Flag Status: Flagged

Good morning SGS,

Could we please test for pH and CEC for the following samples:

- BH2_0.2-0.3
- BH5_0.3-0.4
- BH9_0.1-0.2

For a 3-day TAT?

SGS EHS Alexandria Laboratory
SE255412A COC
Received: 01 – Nov – 2023

Thanks and kind regards,

Sean Nolan
Environmental Scientist
SafeWork NSW Licensed Asbestos Assessor
T (02) 4254 1004 **M** 0430 468 538
E sean.nolan@eiaustralia.com.au
Suite 126, Level 1
1 Burelli Street
Wollongong, NSW 2500
www.eiaustralia.com.au

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EI Australia is a proud member of the Australian Contaminated Land Consultants Association and the Australian Geomechanics Society.

From: AU.Environmental.Sydney@SGS.com [mailto:AU.Environmental.Sydney@SGS.com]
Sent: Thursday, 26 October 2023 4:19 PM
To: Laboratory Results - EIAustralia; Sean Nolan - EI Australia
Subject: Report Job SE255412, your reference E26160 1 Veno St, Heathcote, order number E26160

SAMPLE RECEIPT ADVICE

SE255412A

CLIENT DETAILS

Contact	Sean Nolan
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	sean.nolan@eiaustralia.com.au
Project	**E26160 1 Veno St, Heathcote -Addtional**
Order Number	**E26160**
Samples	19

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Wed 1/11/2023
Report Due	Mon 6/11/2023
SGS Reference	**SE255412A**

SUBMISSION DETAILS

This is to confirm that 19 samples were received on Wednesday 1/11/2023. Results are expected to be ready by COB Monday 6/11/2023. Please quote SGS reference SE255412A when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	3 Soil	Type of documentation received	Email
Date documentation received	1/11/2023@11:06am	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	13.5°C
Sample container provider	SGS	Turnaround time requested	Three Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

COMMENTS

SAMPLE RECEIPT ADVICE

SE255412A

CLIENT DETAILS

Client EI AUSTRALIA

Project E26160 1 Veno St, Heathcote -Addtional

SUMMARY OF ANALYSIS

No.	Sample ID	Exchangeable Cations and Cation Exchange Capacity	Moisture Content	pH in soil (1:5)
002	BH2_0.2-0.3	13	1	1
007	BH5_0.3-0.4	13	1	1
013	BH9_0.1-0.2	13	1	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 .

Sheet 1 of 1

Site: 1 Vero St, Heathcote

Project No: E26160

Laboratory:

SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM ^{A} /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM ^{A} /TRH/BTEX/PAHs	HM ^{A} /TRH/BTEX	BTEX	VOCs	~~Asbestos~~ Phenols	Asbestos Quantification (500ml)	Asbestos 10L field screening	Excavated Natural Material (ENM) Suite	ENM Suite - Stockpile discrete (TRH/BTEX/PAHs)	ENM Suite - Stockpile composite (HM ^{A} /pH / EC / Foreign Materials)	Dewatering Suite	pH / pH peroxide	sPOCAS	Chromium Reducible Sulfur (CrS)	PFAS	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride	Lead	TCLP HM ^{B} / PAH
BH2M	1	S, P, VC	26/10/23	AM		X				X			X	X															
BH7M	2	SP, VC	↓			↓				X			X	X															
BH10M	3	S, P, VC	↓			↓				X			X	X															
GWQD_20231026	4	S, P, VC	↓			↓					X																		
GWQR_20231026	5	S, P, VC	↓			↓					X																		
QTB1	6	VC	↓			↓						X																	
QTS1	7	VC	↓			↓						X																	

SGS EHS Sydney COC
SE255779

Comments

HM ^{A}
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM ^{B}
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND
☑ Standard
☐ 24 Hours
☐ 48 Hours
☐ 72 Hours
☐ Other______

Container Type:
J = solvent washed, acid rinsed, Teflon sealed glass jar
S = solvent washed, acid rinsed glass bottle
P = natural HDPE plastic bottle
VC = glass vial, Teflon Septum
ZLB = Zip-Lock Bag BB = Bulk Bag

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table ☐

Sampler's Name (EI):	Received by (SGS):
Print Sean Nolan	Print M Rousa
Signature	Signature
Date 26/10/23	Date 27.10.23 (0145)

Sampler's Comments:
- Please send GWQT_20231026 to envirolab (separate COC attached)

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au, sean, joel

eiaustralia
Contamination | Remediation | Geotechnical

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

SAMPLE RECEIPT ADVICE

SE255779

CLIENT DETAILS

Contact	Joel Heininger
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	joel.heininger@eiaustralia.com.au
Project	**E26160 1 Veno St, Heathcote**
Order Number	**E26160**
Samples	7

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Fri 27/10/2023
Report Due	Fri 3/11/2023
SGS Reference	**SE255779**

SUBMISSION DETAILS

This is to confirm that 7 samples were received on Friday 27/10/2023. Results are expected to be ready by COB Friday 3/ 11/2023. Please quote SGS reference SE255779 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	7 Water	Type of documentation received	COC
Date documentation received	27/10/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	15.6°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

COMMENTS

SAMPLE RECEIPT ADVICE

SE255779

CLIENT DETAILS

Client EI AUSTRALIA

Project E26160 1 Veno St, Heathcote

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	PAH (Polynuclear Aromatic Hydrocarbons) in Water	Total Phenolics in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
001	BH2M	1	22	1	7	9	77	7
002	BH7M	1	22	1	7	9	77	7
003	BH10M	1	22	1	7	9	77	7
004	GWQD_20231026	1	-	-	7	9	11	7
005	GWQR_20231026	1	-	-	7	9	11	7
006	QTB1	-	-	-	-	-	11	-
007	QTS1	-	-	-	-	-	11	-

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 .

Appendix H – Laboratory Analytical Reports

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Sean Nolan
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	sean.nolan@eiaustralia.com.au
Project	**E26160 1 Veno St, Heathcote**
Order Number	**E26160**
Samples	16

LABORATORY DETAILS

Manager	Shane McDermott
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE266428 R0**
Date Received	7/6/2024
Date Reported	17/6/2024

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 Identifier Ravee Sivasubramaniam

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Dong LIANG
Metals/Inorganics Team Leader

Kamrul AHSAN
Senior Chemist

Ly Kim HA
Organic Section Head

S. Ravees...

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

Shane

Shane MCDERMOTT
Laboratory Manager

Teresa NGUYEN
Organic Chemist

VOC's in Soil [AN433] Tested: 11/6/2024

PARAMETER	UOM	LOR	BH11_0.2-0.3 SOIL - 6/6/2024 SE266428.001	BH11_0.6-0.7 SOIL - 6/6/2024 SE266428.002	BH12_0.1-0.2 SOIL - 6/6/2024 SE266428.003	BH13_0.1-0.2 SOIL - 6/6/2024 SE266428.004	BH13_0.5-0.7 SOIL - 6/6/2024 SE266428.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH14_0.1-0.2 SOIL - 6/6/2024 SE266428.006	BH14_0.5-0.6 SOIL - 6/6/2024 SE266428.007	BH15_0.2-0.3 SOIL - 6/6/2024 SE266428.008	BH15_0.6-0.7 SOIL - 6/6/2024 SE266428.009	BH16_0.2-0.3 SOIL - 6/6/2024 SE266428.010
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH17_0.2-0.3 SOIL - 6/6/2024 SE266428.011	BH17_0.5-0.6 SOIL - 6/6/2024 SE266428.012	QD_20240606 SOIL - 6/6/2024 SE266428.013	TB SOIL - 6/6/2024 SE266428.015	TS SOIL - 6/6/2024 SE266428.016
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[124%]
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[116%]
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[121%]
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	[120%]
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[120%]
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	-
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	-
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	-

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 11/6/2024

PARAMETER	UOM	LOR	BH11_0.2-0.3 SOIL - 6/6/2024 SE266428.001	BH11_0.6-0.7 SOIL - 6/6/2024 SE266428.002	BH12_0.1-0.2 SOIL - 6/6/2024 SE266428.003	BH13_0.1-0.2 SOIL - 6/6/2024 SE266428.004	BH13_0.5-0.7 SOIL - 6/6/2024 SE266428.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH14_0.1-0.2 SOIL - 6/6/2024 SE266428.006	BH14_0.5-0.6 SOIL - 6/6/2024 SE266428.007	BH15_0.2-0.3 SOIL - 6/6/2024 SE266428.008	BH15_0.6-0.7 SOIL - 6/6/2024 SE266428.009	BH16_0.2-0.3 SOIL - 6/6/2024 SE266428.010
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH17_0.2-0.3 SOIL - 6/6/2024 SE266428.011	BH17_0.5-0.6 SOIL - 6/6/2024 SE266428.012	QD_20240606 SOIL - 6/6/2024 SE266428.013
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: 11/6/2024

PARAMETER	UOM	LOR	BH11_0.2-0.3 SOIL - 6/6/2024 SE266428.001	BH11_0.6-0.7 SOIL - 6/6/2024 SE266428.002	BH12_0.1-0.2 SOIL - 6/6/2024 SE266428.003	BH13_0.1-0.2 SOIL - 6/6/2024 SE266428.004	BH13_0.5-0.7 SOIL - 6/6/2024 SE266428.005
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	BH14_0.1-0.2 SOIL - 6/6/2024 SE266428.006	BH14_0.5-0.6 SOIL - 6/6/2024 SE266428.007	BH15_0.2-0.3 SOIL - 6/6/2024 SE266428.008	BH15_0.6-0.7 SOIL - 6/6/2024 SE266428.009	BH16_0.2-0.3 SOIL - 6/6/2024 SE266428.010
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	BH17_0.2-0.3 SOIL - 6/6/2024 SE266428.011	BH17_0.5-0.6 SOIL - 6/6/2024 SE266428.012	QD_20240606 SOIL - 6/6/2024 SE266428.013
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: 11/6/2024

			BH11_0.2-0.3	BH11_0.6-0.7	BH12_0.1-0.2	BH13_0.1-0.2	BH13_0.5-0.7
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			6/6/2024	6/6/2024	6/6/2024	6/6/2024	6/6/2024
PARAMETER	UOM	LOR	SE266428.001	SE266428.002	SE266428.003	SE266428.004	SE266428.005
Naphthalene	mg/kg	0.1	<0.1	<0.1	0.2	<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	0.3	<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	0.2	<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

			BH14_0.1-0.2	BH14_0.5-0.6	BH15_0.2-0.3	BH15_0.6-0.7	BH16_0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			6/6/2024	6/6/2024	6/6/2024	6/6/2024	6/6/2024
PARAMETER	UOM	LOR	SE266428.006	SE266428.007	SE266428.008	SE266428.009	SE266428.010
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	0.2
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: 11/6/2024 (continued)

PARAMETER	UOM	LOR	BH17_0.2-0.3 SOIL - 6/6/2024 SE266428.011	BH17_0.5-0.6 SOIL - 6/6/2024 SE266428.012
Naphthalene	mg/kg	0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 11/6/2024

			BH11_0.2-0.3 SOIL - 6/6/2024	BH12_0.1-0.2 SOIL - 6/6/2024	BH13_0.1-0.2 SOIL - 6/6/2024	BH14_0.1-0.2 SOIL - 6/6/2024	BH15_0.2-0.3 SOIL - 6/6/2024
PARAMETER	**UOM**	**LOR**	**SE266428.001**	**SE266428.003**	**SE266428.004**	**SE266428.006**	**SE266428.008**
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<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	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 11/6/2024 (continued)

PARAMETER	UOM	LOR	BH16_0.2-0.3 SOIL - 6/6/2024 SE266428.010	BH17_0.2-0.3 SOIL - 6/6/2024 SE266428.011
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1
Lindane (gamma BHC)	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
Total OC VIC EPA	mg/kg	1	<1	<1

OP Pesticides in Soil [AN420] Tested: 11/6/2024

PARAMETER	UOM	LOR	BH11_0.2-0.3 SOIL - 6/6/2024 SE266428.001	BH12_0.1-0.2 SOIL - 6/6/2024 SE266428.003	BH13_0.1-0.2 SOIL - 6/6/2024 SE266428.004	BH14_0.1-0.2 SOIL - 6/6/2024 SE266428.006	BH15_0.2-0.3 SOIL - 6/6/2024 SE266428.008
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	BH16_0.2-0.3 SOIL - 6/6/2024 SE266428.010	BH17_0.2-0.3 SOIL - 6/6/2024 SE266428.011
Dichlorvos	mg/kg	0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7

PCBs in Soil [AN420] Tested: 11/6/2024

PARAMETER	UOM	LOR	BH11_0.2-0.3 SOIL - 6/6/2024 SE266428.001	BH12_0.1-0.2 SOIL - 6/6/2024 SE266428.003	BH13_0.1-0.2 SOIL - 6/6/2024 SE266428.004	BH14_0.1-0.2 SOIL - 6/6/2024 SE266428.006	BH15_0.2-0.3 SOIL - 6/6/2024 SE266428.008
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

PARAMETER	UOM	LOR	BH16_0.2-0.3 SOIL - 6/6/2024 SE266428.010	BH17_0.2-0.3 SOIL - 6/6/2024 SE266428.011
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

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 11/6/2024

			BH11_0.2-0.3	BH11_0.6-0.7	BH12_0.1-0.2	BH13_0.1-0.2	BH13_0.5-0.7
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			6/6/2024	6/6/2024	6/6/2024	6/6/2024	6/6/2024
PARAMETER	**UOM**	**LOR**	**SE266428.001**	**SE266428.002**	**SE266428.003**	**SE266428.004**	**SE266428.005**
Arsenic, As	mg/kg	1	3	5	3	5	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	51	22	72	26	22
Copper, Cu	mg/kg	0.5	12	<0.5	31	3.5	<0.5
Lead, Pb	mg/kg	1	3	12	3	12	10
Nickel, Ni	mg/kg	0.5	50	0.9	73	17	0.8
Zinc, Zn	mg/kg	2	31	4.2	47	15	3.5

			BH14_0.1-0.2	BH14_0.5-0.6	BH15_0.2-0.3	BH15_0.6-0.7	BH16_0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			6/6/2024	6/6/2024	6/6/2024	6/6/2024	6/6/2024
PARAMETER	**UOM**	**LOR**	**SE266428.006**	**SE266428.007**	**SE266428.008**	**SE266428.009**	**SE266428.010**
Arsenic, As	mg/kg	1	4	6	3	5	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	55	13	46	21	23
Copper, Cu	mg/kg	0.5	14	15	12	<0.5	5.8
Lead, Pb	mg/kg	1	10	14	7	8	10
Nickel, Ni	mg/kg	0.5	52	1.7	49	0.8	16
Zinc, Zn	mg/kg	2	39	13	35	3.3	21

			BH17_0.2-0.3	BH17_0.5-0.6	QD_20240606
			SOIL	SOIL	SOIL
			-	-	-
			6/6/2024	6/6/2024	6/6/2024
PARAMETER	**UOM**	**LOR**	**SE266428.011**	**SE266428.012**	**SE266428.013**
Arsenic, As	mg/kg	1	5	10	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	22	25	70
Copper, Cu	mg/kg	0.5	2.9	<0.5	17
Lead, Pb	mg/kg	1	12	13	8
Nickel, Ni	mg/kg	0.5	9.7	3.8	73
Zinc, Zn	mg/kg	2	9.7	4.3	45

Mercury in Soil [AN312] Tested: 11/6/2024

PARAMETER	UOM	LOR	BH11_0.2-0.3 SOIL - 6/6/2024 SE266428.001	BH11_0.6-0.7 SOIL - 6/6/2024 SE266428.002	BH12_0.1-0.2 SOIL - 6/6/2024 SE266428.003	BH13_0.1-0.2 SOIL - 6/6/2024 SE266428.004	BH13_0.5-0.7 SOIL - 6/6/2024 SE266428.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH14_0.1-0.2 SOIL - 6/6/2024 SE266428.006	BH14_0.5-0.6 SOIL - 6/6/2024 SE266428.007	BH15_0.2-0.3 SOIL - 6/6/2024 SE266428.008	BH15_0.6-0.7 SOIL - 6/6/2024 SE266428.009	BH16_0.2-0.3 SOIL - 6/6/2024 SE266428.010
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH17_0.2-0.3 SOIL - 6/6/2024 SE266428.011	BH17_0.5-0.6 SOIL - 6/6/2024 SE266428.012	QD_20240606 SOIL - 6/6/2024 SE266428.013
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 11/6/2024

PARAMETER	UOM	LOR	BH11_0.2-0.3 SOIL - 6/6/2024 SE266428.001	BH11_0.6-0.7 SOIL - 6/6/2024 SE266428.002	BH12_0.1-0.2 SOIL - 6/6/2024 SE266428.003	BH13_0.1-0.2 SOIL - 6/6/2024 SE266428.004	BH13_0.5-0.7 SOIL - 6/6/2024 SE266428.005
% Moisture	%w/w	1	10.1	20.2	11.2	12.1	14.2

PARAMETER	UOM	LOR	BH14_0.1-0.2 SOIL - 6/6/2024 SE266428.006	BH14_0.5-0.6 SOIL - 6/6/2024 SE266428.007	BH15_0.2-0.3 SOIL - 6/6/2024 SE266428.008	BH15_0.6-0.7 SOIL - 6/6/2024 SE266428.009	BH16_0.2-0.3 SOIL - 6/6/2024 SE266428.010
% Moisture	%w/w	1	10.5	9.3	11.4	18.3	12.6

PARAMETER	UOM	LOR	BH17_0.2-0.3 SOIL - 6/6/2024 SE266428.011	BH17_0.5-0.6 SOIL - 6/6/2024 SE266428.012	QD_20240606 SOIL - 6/6/2024 SE266428.013	TB SOIL - 6/6/2024 SE266428.015
% Moisture	%w/w	1	14.4	17.0	11.4	<1.0

Fibre Identification in soil [AS4964/AN602] Tested: 13/6/2024

PARAMETER	UOM	LOR	BH11_0.2-0.3 SOIL - 6/6/2024 SE266428.001	BH12_0.1-0.2 SOIL - 6/6/2024 SE266428.003	BH13_0.1-0.2 SOIL - 6/6/2024 SE266428.004	BH14_0.1-0.2 SOIL - 6/6/2024 SE266428.006	BH15_0.2-0.3 SOIL - 6/6/2024 SE266428.008
Date Analysed*	No unit	-	14/06/2024 00:00	14/06/2024 00:00	14/06/2024 00:00	14/06/2024 00:00	14/06/2024 00:00
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	BH16_0.2-0.3 SOIL - 6/6/2024 SE266428.010	BH17_0.2-0.3 SOIL - 6/6/2024 SE266428.011
Date Analysed*	No unit	-	14/06/2024 00:00	14/06/2024 00:00
Asbestos Detected	No unit	-	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01

VOCs in Water [AN433] Tested: 13/6/2024

			QR_20240606 WATER - 6/6/2024
PARAMETER	UOM	LOR	SE266428.014
Benzene	μg/L	0.5	<0.5
Toluene	μg/L	0.5	<0.5
Ethylbenzene	μg/L	0.5	<0.5
m/p-xylene	μg/L	1	<1
o-xylene	μg/L	0.5	<0.5
Total Xylenes	μg/L	1.5	<1.5
Total BTEX	μg/L	3	<3
Naphthalene (VOC)*	μg/L	0.5	<0.5

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 13/6/2024

			QR_20240606 WATER - 6/6/2024
PARAMETER	UOM	LOR	SE266428.014
TRH C6-C9	µg/L	40	<40
Benzene (F0)	µg/L	0.5	<0.5
TRH C6-C10	µg/L	50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 13/6/2024

PARAMETER	UOM	LOR	QR_20240606 WATER - 6/6/2024 SE266428.014
TRH C10-C14	µg/L	50	<50
TRH C15-C28	µg/L	200	<200
TRH C29-C36	µg/L	200	<200
TRH C37-C40	µg/L	200	<200
TRH >C10-C16	µg/L	60	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60
TRH >C16-C34 (F3)	µg/L	500	<500
TRH >C34-C40 (F4)	µg/L	500	<500
TRH C10-C40	µg/L	320	<320

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 11/6/2024

			QR_20240606 WATER - 6/6/2024
PARAMETER	UOM	LOR	SE266428.014
Arsenic	µg/L	1	<1
Cadmium	µg/L	0.1	<0.1
Chromium	µg/L	1	<1
Copper	µg/L	1	<1
Lead	µg/L	1	<1
Nickel	µg/L	1	<1
Zinc	µg/L	5	<5

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 12/6/2024

PARAMETER	UOM	LOR	QR_20240606 WATER - 6/6/2024 SE266428.014
Mercury	mg/L	0.0001	<0.0001

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by AAS or ICP as per USEPA Method 200.8.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN318	Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting.
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be 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	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

AN602/AS4964	The sample can be reported "no asbestos found at the reporting limit (RL) of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
		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.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

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Telephone	61 2 95160722
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Project	**E26160 1 Veno St, Heathcote**
Order Number	**E26160**
Samples	7

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SGS Reference	**SE266428 R0**
Date Received	07 Jun 2024
Date Reported	17 Jun 2024

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 Identifier Ravee Sivasubramaniam

SIGNATORIES

S. Raveendran.

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

ANALYTICAL REPORT

RESULTS

Fibre Identification in soil

Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Date Analysed	Fibre Identification	Est.%w/w*
SE266428.001	BH11_0.2-0.3	Soil	100g Clay, Sand, Rocks	06 Jun 2024	14 Jun 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE266428.003	BH12_0.1-0.2	Soil	87g Clay, Sand, Rocks, Bitumen	06 Jun 2024	14 Jun 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE266428.004	BH13_0.1-0.2	Soil	78g Clay, Sand, Rocks	06 Jun 2024	14 Jun 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE266428.006	BH14_0.1-0.2	Soil	124g Clay, Sand, Rocks	06 Jun 2024	14 Jun 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE266428.008	BH15_0.2-0.3	Soil	101g Clay, Sand, Rocks	06 Jun 2024	14 Jun 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE266428.010	BH16_0.2-0.3	Soil	115g Clay, Sand, Rocks	06 Jun 2024	14 Jun 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE266428.011	BH17_0.2-0.3	Soil	107g Clay, Sand, Rocks	06 Jun 2024	14 Jun 2024	No Asbestos Found at RL of 0.1g/kg	<0.01

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be 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	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

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Facsimile	(Not specified)
Email	sean.nolan@eiaustralia.com.au
Project	**E26160 1 Veno St, Heathcote-Additional**
Order Number	**E26160**
Samples	16

LABORATORY DETAILS

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SGS Reference	**SE266428A R0**
Date Received	18/6/2024
Date Reported	20/6/2024

COMMENTS

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

SIGNATORIES

Kamrul AHSAN
Senior Chemist

Shane MCDERMOTT
Laboratory Manager

TCLP (Toxicity Characteristic Leaching Procedure) for Metals [AN006] Tested: 19/6/2024

PARAMETER	UOM	LOR	BH12_0.1-0.2 SOIL - 6/6/2024 SE266428A.003	BH14_0.1-0.2 SOIL - 6/6/2024 SE266428A.006
pH 1:20	pH Units	-	8.7	8.5
pH 1:20 plus HCL	pH Units	-	2.1	2.0
Extraction Solution Used	No unit	-	1	1
Mass of Sample Used*	g	-	13	13
Volume of ExtractionSolution Used*	mL	-	250	250
pH TCLP after 18 hours	pH Units	-	5.5	5.1

Metals in TCLP Extract by ICPOES [AN320] Tested: 20/6/2024

PARAMETER	UOM	LOR	BH12_0.1-0.2 SOIL - 6/6/2024 SE266428A.003	BH14_0.1-0.2 SOIL - 6/6/2024 SE266428A.006
Nickel, Ni	mg/L	0.005	0.030	0.035

METHOD	METHODOLOGY SUMMARY
AN006	Contaminants of interest in a waste material are leached out of the waste with a selected leaching solution under controlled conditions. The ratio of sample to extraction fluid is 100g to 2L (1 to 20 by mass). The concentration of each contaminant of interest is determined in the leachate by appropriate methods after separation from the sample by filtering. Base on USEPA 1311.
AN006	Extraction Fluid #1: This fluid is made by combining 128.6mL of dilute sodium hydroxide solution and 11.5mL glacial acetic acid with water and diluting to a volume of 2 litres. The pH of this fluid should be 4.93 ± 0.05.
AN006	Extraction Fluid #2: This fluid is made by diluting 5.7mL glacial acetic acid with water to a volume of 1 litre. The pH of this fluid should be 2.88 ± 0.05.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN320	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components .
AN320	Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements . Reference APHA 3120 B.

FOOTNOTES

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**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.

-	Not analysed.
NVL	Not validated.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.

UOM	Unit of Measure.
LOR	Limit of Reporting.
↑↓	Raised/lowered Limit of Reporting.

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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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

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Project	**E26160 1 Veno St Heathcote**
Order Number	**E26160**
Samples	3

LABORATORY DETAILS

Manager	Shane McDermott
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Email	au.environmental.sydney@sgs.com
SGS Reference	**SE266429 R0**
Date Received	7/6/2024
Date Reported	17/6/2024

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 Identifier Ravee Sivasubramaniam

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Chemist

Dong LIANG
Metals/Inorganics Team Leader

Kamrul AHSAN
Senior Chemist

Ly Kim HA
Organic Section Head

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

Shane

Shane MCDERMOTT
Laboratory Manager

Teresa NGUYEN
Organic Chemist

VOC's in Soil [AN433] Tested: 11/6/2024

PARAMETER	UOM	LOR	BH7M_DL1_0.1-0.2 SOIL - 6/6/2024 SE266429.001	BH7M_DL2_0.2-0.3 SOIL - 6/6/2024 SE266429.002	BH7M_DL3_0.1-0.2 SOIL - 6/6/2024 SE266429.003
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 (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 11/6/2024

PARAMETER	UOM	LOR	BH7M_DL1_0.1-0.2 SOIL - 6/6/2024 SE266429.001	BH7M_DL2_0.2-0.3 SOIL - 6/6/2024 SE266429.002	BH7M_DL3_0.1-0.2 SOIL - 6/6/2024 SE266429.003
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: 11/6/2024

PARAMETER	UOM	LOR	BH7M_DL1_0.1-0.2 SOIL - 6/6/2024 SE266429.001	BH7M_DL2_0.2-0.3 SOIL - 6/6/2024 SE266429.002	BH7M_DL3_0.1-0.2 SOIL - 6/6/2024 SE266429.003
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: 11/6/2024

PARAMETER	UOM	LOR	BH7M_DL1_0.1-0.2 SOIL - 6/6/2024 SE266429.001	BH7M_DL2_0.2-0.3 SOIL - 6/6/2024 SE266429.002	BH7M_DL3_0.1-0.2 SOIL - 6/6/2024 SE266429.003
Naphthalene	mg/kg	0.1	<0.1	0.2	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	0.2	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	0.3	<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	0.2	<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	0.9	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 11/6/2024

PARAMETER	UOM	LOR	BH7M_DL1_0.1-0.2 SOIL - 6/6/2024 SE266429.001	BH7M_DL2_0.2-0.3 SOIL - 6/6/2024 SE266429.002	BH7M_DL3_0.1-0.2 SOIL - 6/6/2024 SE266429.003
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 (gamma BHC)	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
Total OC VIC EPA	mg/kg	1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 11/6/2024

PARAMETER	UOM	LOR	BH7M_DL1_0.1-0.2 SOIL - 6/6/2024 SE266429.001	BH7M_DL2_0.2-0.3 SOIL - 6/6/2024 SE266429.002	BH7M_DL3_0.1-0.2 SOIL - 6/6/2024 SE266429.003
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: 11/6/2024

PARAMETER	UOM	LOR	BH7M_DL1_0.1-0.2 SOIL - 6/6/2024 SE266429.001	BH7M_DL2_0.2-0.3 SOIL - 6/6/2024 SE266429.002	BH7M_DL3_0.1-0.2 SOIL - 6/6/2024 SE266429.003
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: 11/6/2024

PARAMETER	UOM	LOR	BH7M_DL1_0.1-0.2 SOIL - 6/6/2024 SE266429.001	BH7M_DL2_0.2-0.3 SOIL - 6/6/2024 SE266429.002	BH7M_DL3_0.1-0.2 SOIL - 6/6/2024 SE266429.003
Arsenic, As	mg/kg	1	3	3	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	77	89	45
Copper, Cu	mg/kg	0.5	26	23	12
Lead, Pb	mg/kg	1	5	6	7
Nickel, Ni	mg/kg	0.5	79	93	44
Zinc, Zn	mg/kg	2	47	58	29

Mercury in Soil [AN312] Tested: 11/6/2024

PARAMETER	UOM	LOR	BH7M_DL1_0.1-0.2 SOIL - 6/6/2024 SE266429.001	BH7M_DL2_0.2-0.3 SOIL - 6/6/2024 SE266429.002	BH7M_DL3_0.1-0.2 SOIL - 6/6/2024 SE266429.003
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 11/6/2024

PARAMETER	UOM	LOR	BH7M_DL1_0.1-0.2 SOIL - 6/6/2024 SE266429.001	BH7M_DL2_0.2-0.3 SOIL - 6/6/2024 SE266429.002	BH7M_DL3_0.1-0.2 SOIL - 6/6/2024 SE266429.003
% Moisture	%w/w	1	11.8	8.0	13.4

Fibre Identification in soil [AS4964/AN602] Tested: 13/6/2024

PARAMETER	UOM	LOR	BH7M_DL1_0.1-0.2 SOIL - 6/6/2024 SE266429.001	BH7M_DL2_0.2-0.3 SOIL - 6/6/2024 SE266429.002	BH7M_DL3_0.1-0.2 SOIL - 6/6/2024 SE266429.003
Date Analysed*	No unit	-	14/06/2024 00:00	14/06/2024 00:00	14/06/2024 00:00
Asbestos Detected	No unit	-	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01

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 AAS 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). Total PAH calculated from individual analyte detections at or above the limit of reporting.
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be 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	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

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

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

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

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

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

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

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

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

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

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

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Project	**E26160 1 Veno St Heathcote**
Order Number	**E26160**
Samples	3

LABORATORY DETAILS

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SGS Reference	**SE266429 R0**
Date Received	07 Jun 2024
Date Reported	17 Jun 2024

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 Identifier Ravee Sivasubramaniam

SIGNATORIES

S. Ravee

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

ANALYTICAL REPORT

RESULTS

Fibre Identification in soil　Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Date Analysed	Fibre Identification	Est.%w/w*
SE266429.001	BH7M_DL1_0.1-0.2	Soil	125g Clay, Sand, Rocks	06 Jun 2024	14 Jun 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE266429.002	BH7M_DL2_0.2-0.3	Soil	135g Clay, Sand, Rocks	06 Jun 2024	14 Jun 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE266429.003	BH7M_DL3_0.1-0.2	Soil	114g Clay, Sand, Rocks	06 Jun 2024	14 Jun 2024	No Asbestos Found at RL of 0.1g/kg	<0.01

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be 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	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples , Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

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Project	**E26160 1 Veno St Heathcote -Additional**
Order Number	**E26160**
Samples	3

LABORATORY DETAILS

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SGS Reference	**SE266429A R0**
Date Received	18/6/2024
Date Reported	20/6/2024

COMMENTS

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

SIGNATORIES

Kamrul AHSAN
Senior Chemist

Shane MCDERMOTT
Laboratory Manager

TCLP (Toxicity Characteristic Leaching Procedure) for Metals [AN006] Tested: 19/6/2024

PARAMETER	UOM	LOR	BH7M_DL2_0.2-0.3 SOIL - 6/6/2024 SE266429A.002
pH 1:20	pH Units	-	9.1
pH 1:20 plus HCL	pH Units	-	2.1
Extraction Solution Used	No unit	-	1
Mass of Sample Used*	g	-	13
Volume of ExtractionSolution Used*	mL	-	250
pH TCLP after 18 hours	pH Units	-	5.4

Metals in TCLP Extract by ICPOES [AN320] Tested: 20/6/2024

PARAMETER	UOM	LOR	BH7M_DL2_0.2-0.3 SOIL - 6/6/2024 SE266429A.002
Nickel, Ni	mg/L	0.005	0.073

METHOD	METHODOLOGY SUMMARY
AN006	Contaminants of interest in a waste material are leached out of the waste with a selected leaching solution under controlled conditions. The ratio of sample to extraction fluid is 100g to 2L (1 to 20 by mass). The concentration of each contaminant of interest is determined in the leachate by appropriate methods after separation from the sample by filtering. Base on USEPA 1311.
AN006	Extraction Fluid #1: This fluid is made by combining 128.6mL of dilute sodium hydroxide solution and 11.5mL glacial acetic acid with water and diluting to a volume of 2 litres. The pH of this fluid should be 4.93 ± 0.05.
AN006	Extraction Fluid #2: This fluid is made by diluting 5.7mL glacial acetic acid with water to a volume of 1 litre. The pH of this fluid should be 2.88 ± 0.05.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN320	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components .
AN320	Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements . Reference APHA 3120 B.

FOOTNOTES

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**	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.

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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.

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ANALYTICAL REPORT

Accreditation No. 2562

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Project	**E26160 1 Veno Street Heathcote NSW**	SGS Reference	**SE267083 R0**
Order Number	**E26160**	Date Received	20/6/2024
Samples	7	Date Reported	25/6/2024

COMMENTS

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

Micros subcontracted to Symbio Laboratories, 2 Sirius Road, Lane Cove West NSW 2066, NATA Accreditation Number 2455. Report No S1559269

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Ly Kim HA
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Shane

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YING YING ZHANG

Ying Ying ZHANG
Laboratory Technician

VOCs in Water [AN433] Tested: 24/6/2024

PARAMETER	UOM	LOR	BH2M-2 WATER - 20/6/2024 SE267083.001	BH10M-2 WATER - 20/6/2024 SE267083.002	BH17M-1 WATER - 20/6/2024 SE267083.003	QD240620 WATER - 20/6/2024 SE267083.004	QR240620 WATER - 20/6/2024 SE267083.005
Benzene	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
Ethylbenzene	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
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
Total BTEX	µg/L	3	<3	<3	<3	<3	<3
Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
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	0.5	<0.5	<0.5	<0.5	-	-
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	-	-
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	-	-
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	**0.6**	<0.5	<0.5	-	-
Bromoform (THM)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
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	-	-
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	-	-

VOCs in Water [AN433] Tested: 24/6/2024 (continued)

PARAMETER	UOM	LOR	BH2M-2 WATER - 20/6/2024 SE267083.001	BH10M-2 WATER - 20/6/2024 SE267083.002	BH17M-1 WATER - 20/6/2024 SE267083.003	QD240620 WATER - 20/6/2024 SE267083.004	QR240620 WATER - 20/6/2024 SE267083.005
Bromobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
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	-	-
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 VOC	µg/L	10	<10	<10	<10	-	-

VOCs in Water [AN433] Tested: 24/6/2024 (continued)

			QTS240620 WATER - 20/6/2024	QTB240620 WATER - 20/6/2024
PARAMETER	UOM	LOR	SE267083.006	SE267083.007
Benzene	µg/L	0.5	[96%]	<0.5
Toluene	µg/L	0.5	[94%]	<0.5
Ethylbenzene	µg/L	0.5	[101%]	<0.5
m/p-xylene	µg/L	1	[105%]	<1
o-xylene	µg/L	0.5	[105%]	<0.5
Total Xylenes	µg/L	1.5	-	<1.5
Total BTEX	µg/L	3	-	<3
Naphthalene (VOC)*	µg/L	0.5	[96%]	<0.5
Dichlorodifluoromethane (CFC-12)	µg/L	5	-	-
Chloromethane	µg/L	5	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	-	-
Bromomethane	µg/L	10	-	-
Chloroethane	µg/L	5	-	-
Trichlorofluoromethane	µg/L	1	-	-
Acetone (2-propanone)	µg/L	10	-	-
Iodomethane	µg/L	5	-	-
1,1-dichloroethene	µg/L	0.5	-	-
Acrylonitrile	µg/L	0.5	-	-
Dichloromethane (Methylene chloride)	µg/L	5	-	-
Allyl chloride	µg/L	2	-	-
Carbon disulfide	µg/L	2	-	-
trans-1,2-dichloroethene	µg/L	0.5	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	0.5	-	-
1,1-dichloroethane	µg/L	0.5	-	-
Vinyl acetate*	µg/L	10	-	-
MEK (2-butanone)	µg/L	10	-	-
cis-1,2-dichloroethene	µg/L	0.5	-	-
Bromochloromethane	µg/L	0.5	-	-
Chloroform (THM)	µg/L	0.5	-	-
2,2-dichloropropane	µg/L	0.5	-	-
1,2-dichloroethane	µg/L	0.5	-	-
1,1,1-trichloroethane	µg/L	0.5	-	-
1,1-dichloropropene	µg/L	0.5	-	-
Carbon tetrachloride	µg/L	0.5	-	-
Dibromomethane	µg/L	0.5	-	-
1,2-dichloropropane	µg/L	0.5	-	-
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	-	-
2-nitropropane	µg/L	100	-	-
Bromodichloromethane (THM)	µg/L	0.5	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5	-	-
cis-1,3-dichloropropene	µg/L	0.5	-	-
trans-1,3-dichloropropene	µg/L	0.5	-	-
1,1,2-trichloroethane	µg/L	0.5	-	-
1,3-dichloropropane	µg/L	0.5	-	-
Dibromochloromethane (THM)	µg/L	0.5	-	-
2-hexanone (MBK)	µg/L	5	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	-	-
Chlorobenzene	µg/L	0.5	-	-
Bromoform (THM)	µg/L	0.5	-	-
Styrene (Vinyl benzene)	µg/L	0.5	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	-	-
1,2,3-trichloropropane	µg/L	0.5	-	-
trans-1,4-dichloro-2-butene	µg/L	1	-	-
Isopropylbenzene (Cumene)	µg/L	0.5	-	-

VOCs in Water [AN433] Tested: 24/6/2024 (continued)

PARAMETER	UOM	LOR	QTS240620 WATER - 20/6/2024 SE267083.006	QTB240620 WATER - 20/6/2024 SE267083.007
Bromobenzene	µg/L	0.5	-	-
n-propylbenzene	µg/L	0.5	-	-
2-chlorotoluene	µg/L	0.5	-	-
4-chlorotoluene	µg/L	0.5	-	-
1,3,5-trimethylbenzene	µg/L	0.5	-	-
tert-butylbenzene	µg/L	0.5	-	-
1,2,4-trimethylbenzene	µg/L	0.5	-	-
sec-butylbenzene	µg/L	0.5	-	-
1,3-dichlorobenzene	µg/L	0.5	-	-
1,4-dichlorobenzene	µg/L	0.3	-	-
p-isopropyltoluene	µg/L	0.5	-	-
1,2-dichlorobenzene	µg/L	0.5	-	-
n-butylbenzene	µg/L	0.5	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	-	-
1,2,4-trichlorobenzene	µg/L	0.5	-	-
Hexachlorobutadiene	µg/L	0.5	-	-
1,2,3-trichlorobenzene	µg/L	0.5	-	-
Total VOC	µg/L	10	-	-

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 24/6/2024

PARAMETER	UOM	LOR	BH2M-2 WATER - 20/6/2024 SE267083.001	BH10M-2 WATER - 20/6/2024 SE267083.002	BH17M-1 WATER - 20/6/2024 SE267083.003	QD240620 WATER - 20/6/2024 SE267083.004	QR240620 WATER - 20/6/2024 SE267083.005
TRH C6-C9	µg/L	40	<40	<40	<40	<40	<40
Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
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

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 21/6/2024

PARAMETER	UOM	LOR	BH2M-2 WATER - 20/6/2024 SE267083.001	BH10M-2 WATER - 20/6/2024 SE267083.002	BH17M-1 WATER - 20/6/2024 SE267083.003	QD240620 WATER - 20/6/2024 SE267083.004	QR240620 WATER - 20/6/2024 SE267083.005
TRH C10-C14	µg/L	50	170	<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	180	<60	<60	<60	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	180	<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	430	<320	<320	<320	<320

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 21/6/2024

			BH2M-2 WATER - 20/6/2024	BH10M-2 WATER - 20/6/2024	BH17M-1 WATER - 20/6/2024
PARAMETER	**UOM**	**LOR**	**SE267083.001**	**SE267083.002**	**SE267083.003**
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

Total Phenolics in Water [AN295] Tested: 25/6/2024

			BH2M-2 WATER - 20/6/2024 SE267083.001	BH10M-2 WATER - 20/6/2024 SE267083.002	BH17M-1 WATER - 20/6/2024 SE267083.003
PARAMETER	**UOM**	**LOR**			
Total Phenols	mg/L	0.05	<0.05	<0.05	<0.05

Anions by Ion Chromatography in Water [AN245] Tested: 21/6/2024

			BH10M-2 WATER - 20/6/2024
PARAMETER	**UOM**	**LOR**	**SE267083.002**
Chloride	mg/L	1	38
Sulfate, SO4	mg/L	1	100
Nitrate Nitrogen, NO3-N	mg/L	0.005	0.013

Nitrite in Water [AN277] Tested: 21/6/2024

PARAMETER	UOM	LOR	BH10M-2 WATER - 20/6/2024 SE267083.002
Nitrite Nitrogen, NO2 as N	mg/L	0.005	<0.005
Total Oxidised Nitrogen, NOx-N	mg/L	0.005	**0.017**

TKN Kjeldahl Digestion by Discrete Analyser [AN292] Tested: 21/6/2024

PARAMETER	UOM	LOR	BH10M-2 WATER - 20/6/2024 SE267083.002
Total Kjeldahl Nitrogen	mg/L	0.05	0.46
Total Nitrogen (calc)	mg/L	0.05	0.47

Ammonia Nitrogen by Discrete Analyser [AN291] Tested: 21/6/2024

PARAMETER	UOM	LOR	BH10M-2 WATER - 20/6/2024 SE267083.002
Ammonia Nitrogen, NH_3 as N	mg/L	0.01	0.07

Total Phosphorus by Kjeldahl Digestion DA in Water [AN279/AN293(Sydney only)] Tested: 21/6/2024

			BH10M-2 WATER - 20/6/2024
PARAMETER	UOM	LOR	SE267083.002
Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	0.19

Filterable Reactive Phosphorus (FRP) [AN278] Tested: 21/6/2024

PARAMETER	UOM	LOR	BH10M-2 WATER - 20/6/2024 SE267083.002
Filterable Reactive Phosphorus as P	mg/L	0.005	<0.005

pH in water [AN101] Tested: 21/6/2024

PARAMETER	UOM	LOR	BH2M-2 WATER - 20/6/2024 SE267083.001	BH10M-2 WATER - 20/6/2024 SE267083.002	BH17M-1 WATER - 20/6/2024 SE267083.003
pH**	No unit	-	6.1	5.5	4.6

Conductivity and TDS by Calculation - Water [AN106] Tested: 21/6/2024

			BH2M-2 WATER - 20/6/2024	BH10M-2 WATER - 20/6/2024	BH17M-1 WATER - 20/6/2024
PARAMETER	**UOM**	**LOR**	**SE267083.001**	**SE267083.002**	**SE267083.003**
Conductivity @ 25 C	µS/cm	2	320	400	470
Total Dissolved Solids (by calculation)	mg/L	10	190	240	280

Total Dissolved Solids (TDS) in water [AN113] Tested: 21/6/2024

PARAMETER	UOM	LOR	BH10M-2 WATER - 20/6/2024 SE267083.002
Total Dissolved Solids Dried at 175-185°C	mg/L	10	260

Alkalinity [AN135] Tested: 21/6/2024

PARAMETER	UOM	LOR	BH10M-2 WATER - 20/6/2024 SE267083.002
Bicarbonate Alkalinity as CaCO3	mg/L	5	<5
Carbonate Alkalinity as CaCO3	mg/L	1	<1
Hydroxide Alkalinity as CaCO3	mg/L	5	<5
Total Alkalinity as CaCO3	mg/L	5	<5
Hydroxide Alkalinity as OH (meq/L)	meq/L	0.06	<0.06
Bicarbonate Alkalinity as HCO3 (meq/L)	meq/L	0.03	<0.03
Carbonate Alkalinity as CO3 (meq/L)	meq/L	0.03	<0.03

Dissolved Oxygen by Membrane Electrode [AN176] Tested: 21/6/2024

PARAMETER	UOM	LOR	BH2M-2 WATER - 20/6/2024 SE267083.001	BH10M-2 WATER - 20/6/2024 SE267083.002	BH17M-1 WATER - 20/6/2024 SE267083.003
Temperature*	°C	-	17.3	19.1	17.4
Dissolved Oxygen**	mg/L	0.5	3.8	8.5	5.9

Forms of Carbon [AN190] Tested: 24/6/2024

PARAMETER	UOM	LOR	BH10M-2 WATER - 20/6/2024 SE267083.002
Total Organic Carbon as NPOC	mg/L	0.2	**4.3**

Total and Volatile Suspended Solids (TSS / VSS) [AN114] Tested: 21/6/2024

			BH10M-2 WATER - 20/6/2024
PARAMETER	**UOM**	**LOR**	**SE267083.002**
Total Suspended Solids Dried at 103-105°C	mg/L	5	80

Turbidity [AN119] Tested: 21/6/2024

			BH10M-2 WATER - 20/6/2024
PARAMETER	UOM	LOR	SE267083.002
Turbidity	NTU	0.5	83

Redox Potential (Eh) in water [AN240] Tested: 21/6/2024

			BH2M-2 WATER - 20/6/2024	BH10M-2 WATER - 20/6/2024	BH17M-1 WATER - 20/6/2024
PARAMETER	**UOM**	**LOR**	**SE267083.001**	**SE267083.002**	**SE267083.003**
Eh of Sample Relative to Standard H+ Electrode***	mV	-500	187	392	381
Temperature of Sample*	°C	0.1	19.5	19.2	19.3

Metals in Water (Dissolved) by ICPOES [AN320] Tested: 24/6/2024

PARAMETER	UOM	LOR	BH10M-2 WATER - 20/6/2024 SE267083.002
Calcium, Ca	mg/L	0.1	**0.8**
Magnesium, Mg	mg/L	0.1	**4.0**
Total Hardness by Calculation	mg CaCO3/L	1	**19**
Sodium Adsorption Ratio	No unit	0.2	**6.4**
Sodium, Na	mg/L	0.5	**63**
Potassium, K	mg/L	0.1	**0.6**
Lithium, Li	mg/L	0.005	<0.005
Soluble Silicon as Silica, SiO2*	mg/L	0.1	**38**

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 24/6/2024

PARAMETER	UOM	LOR	BH2M-2 WATER - 20/6/2024 SE267083.001	BH10M-2 WATER - 20/6/2024 SE267083.002	BH17M-1 WATER - 20/6/2024 SE267083.003	QD240620 WATER - 20/6/2024 SE267083.004	QR240620 WATER - 20/6/2024 SE267083.005
Arsenic	μg/L	1	1	<1	<1	1	<1
Cadmium	μg/L	0.1	<0.1	0.1	0.5	<0.1	<0.1
Copper	μg/L	1	2	5	4	<1	7
Chromium	μg/L	1	<1	<1	<1	<1	<1
Nickel	μg/L	1	<1	1	3	<1	1
Lead	μg/L	1	<1	<1	<1	<1	<1
Zinc	μg/L	5	<5	6	17	<5	<5
Aluminium	μg/L	5	-	11	-	-	-
Antimony	μg/L	1	-	<1	-	-	-
Barium	μg/L	1	-	6	-	-	-
Beryllium	μg/L	1	-	<1	-	-	-
Boron	μg/L	5	-	170	-	-	-
Cobalt	μg/L	1	-	<1	-	-	-
Iron	μg/L	5	-	49	-	-	-
Manganese	μg/L	1	-	23	-	-	-
Molybdenum	μg/L	1	-	<1	-	-	-
Selenium	μg/L	1	-	<1	-	-	-
Silver	μg/L	1	-	<1	-	-	-
Strontium	μg/L	1	-	7	-	-	-
Uranium	μg/L	1	-	<1	-	-	-
Vanadium	μg/L	1	-	<1	-	-	-

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 21/6/2024

			BH2M-2	BH10M-2	BH17M-1	QD240620	QR240620
			WATER	WATER	WATER	WATER	WATER
			-	-	-	-	-
			20/6/2024	20/6/2024	20/6/2024	20/6/2024	20/6/2024
PARAMETER	**UOM**	**LOR**	**SE267083.001**	**SE267083.002**	**SE267083.003**	**SE267083.004**	**SE267083.005**
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Sample Subcontracted [] Tested: 24/6/2024

			BH10M-2 WATER - 20/6/2024
PARAMETER	UOM	LOR	SE267083.002
Sample Subcontracted*	No unit	-	Subcontracted

METHOD	METHODOLOGY SUMMARY
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
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. Total Dissolved Salts can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. SGS use 0.6. Reference APHA 2510 B.
AN106	Salinity may be calculated in terms of NaCl from the sample conductivity. This assumes all soluble salts present , measured by the conductivity, are present as NaCl.
AN113	Total Dissolved Solids: A well-mixed filtered sample of known volume is evaporated to dryness at 180°C and the residue weighed. Approximate methods for correlating chemical analysis with dissolved solids are available . Reference APHA 2540 C.
AN113	The Total Dissolved Solids residue may also be ignited at 550 C and volatile TDS (Organic TDS) and non-volatile TDS (Inorganic) can be determined.
AN114	Total Suspended and Volatile Suspended Solids: The sample is homogenised by shaking and a known volume is filtered through a pre-weighed GF/C filter paper and washed well with deionised water. The filter paper is dried and reweighed. The TSS is the residue retained by the filter per unit volume of sample. Reference APHA 2540 D. Internal Reference AN114
AN119	Turbidity by Nephelometry: Small particles in a light beam scatter light at a range of angles. A turbidimeter measures this scatter and reports results compared to turbidity standards, in NTU. This procedure is not suitable for very dark coloured liquids or samples with high solids because light absorption causes artificially low light scatter and low turbidity. Reference APHA 2130B.
AN135	Alkalinity (and forms of) by Titration: The sample is titrated with standard acid to pH 8.3 (P titre) and pH 4.5 (T titre) and permanent and/or total alkalinity calculated. The results are expressed as equivalents of calcium carbonate or recalculated as bicarbonate, carbonate and hydroxide. Reference APHA 2320. Internal Reference AN135
AN176	Dissolved Oxygen: Dissolved oxygen is measured directly using an oxygen permeable membrane electrode and meter. Under steady state conditions the current is directly proportional to the DO concentration. Samples with no headspace are required for this analysis and if headspace is observed this will be recorded on the report. Internal Reference is AN176 based on APHA 4500-O, C and G.
AN190	TOC and DOC in Water: A homogenised micro portion of sample is injected into a heated reaction chamber packed with an oxidative catalyst that converts organic carbon to carbon dioxide. The CO2 is measured using a non-dispersive infrared detector. The process is fully automated in a commercially available analyser. If required a sugar value can be calculated from the TOC result. Reference APHA 5310 B.
AN190	Chemical oxygen demand can be calculated/estimated based on the O2/C relation as 2.67*NPOC (TOC). This is an estimate only and the factor will vary with sample matrix so results should be interpreted with caution.
AN240	Oxidation-Reduction Potential (Eh): Electrometric measurements are made by potentiometric determination of electron activity (or intensity) with an inert indicator electrode and a suitable reference electrode. At redox equilibrium, the potential difference between the two electrodes equals the redox potential of the system. This measurement is then corrected for the difference between the potential of the reference electrode and that of the standard hydrogen electrode.
AN245	Anions by Ion Chromatography: A water sample is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO2, NO3 and SO4 are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B
AN277	Nitrite ions, when reacted with a reagent containing sulphanilamide and N-(1-naphthyl)-ethylenediamine dihydrochloride produce a highly coloured azo dye that is measured photometrically at 540nm.
AN278	Filterable Reactive Phosphorus by DA (determined on filtered sample): Orthophosphate reacts with ammonium molybdate (Mo VI) and potassium antimonyl tartrate (Sb III) in acid medium to form an antimony-phosphomolybdate complex. This complex is subsequently reduced with ascorbic acid to form a blue colour and the absorbance is read at 880 nm. The sensitivity of the automated method is 10-20 times that of the macro method. Reference APHA 4500-P F
AN279/AN293(Sydney)	The sample is digested with Sulphuric acid, K2SO4 and CuSO4. All forms of phosphorus are converted into orthophosphate. The digest is cooled and placed on the discrete analyser for colorimetric analysis.

AN281	An unfiltered water or soil sample is first digested in a block digestor with sulfuric acid, K2SO4 and CuSO4. The ammonia produced following digestion is then measured colourimetrically using the Discrete Analyser. A portion of the digested sample is buffered to an alkaline pH, and interfering cations are complexed. The ammonia then reacts with salicylate and hypochlorite to give a blue colour whose absorbance is measured at 660nm and compared with calibration standards. This is proportional to the concentration of Total Kjeldahl Nitrogen in the original sample.
AN291	Ammonia in solution reacts with hypochlorite ions from Sodium Dichloroisocyanuate, and salicylate in the presence of Sodium Nitroprusside to form indophenol blue and measured at 660 nm by Discrete Analyser.
AN295	The water sample or extract of sample is distilled in a phosphoric acid stream. Phenolic compounds in the distillate react with a reagent stream of potassium hexacyanoferrate (III) and 4-Amino-2,3-dimethyl-3-pryazolin-5-one in an alkaline medium to form a coloured complex which is analysed spectrophotometrically onboard a continuous flow analyser.
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).
AN320	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components .
AN320	Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements . Reference APHA 3120 B.
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). Total PAH calculated from individual analyte detections at or above the limit of reporting .
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
Calculation	Free and Total Carbon Dioxide may be calculated using alkalinity forms only when the samples TDS is <500mg/L. If TDS is >500mg/L free or total carbon dioxide cannot be reported . APHA4500CO2 D.

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.

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CERTIFICATE OF ANALYSIS 353462

Client Details

Client	EI Australia
Attention	Lab Email
Address	Suite 6.01, 55 Miller Street, Pyrmont, NSW, 2009

Sample Details

Your Reference	**E26160 - 1 Veno Street, Heathcote**
Number of Samples	1 Soil
Date samples received	07/06/2024
Date completed instructions received	07/06/2024

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	17/06/2024
Date of Issue	13/06/2024

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Results Approved By
Giovanni Agosti, Group Technical Manager
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		353462-1
Your Reference	UNITS	QT1_20240606
Date Sampled		06/06/2024
Type of sample		Soil
Date extracted	-	11/06/2024
Date analysed	-	12/06/2024
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	108

svTRH (C10-C40) in Soil		
Our Reference		353462-1
Your Reference	UNITS	QT1_20240606
Date Sampled		06/06/2024
Type of sample		Soil
Date extracted	-	11/06/2024
Date analysed	-	11/06/2024
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
Total +ve TRH (C10-C36)	mg/kg	<50
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	79

Acid Extractable metals in soil		
Our Reference		353462-1
Your Reference	UNITS	QT1_20240606
Date Sampled		06/06/2024
Type of sample		Soil
Date prepared	-	11/06/2024
Date analysed	-	11/06/2024
Arsenic	mg/kg	4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	32
Copper	mg/kg	7
Lead	mg/kg	8
Mercury	mg/kg	<0.1
Nickel	mg/kg	23
Zinc	mg/kg	21

Moisture		
Our Reference		353462-1
Your Reference	UNITS	QT1_20240606
Date Sampled		06/06/2024
Type of sample		Soil
Date prepared	-	11/06/2024
Date analysed	-	12/06/2024
Moisture	%	13

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			11/06/2024	[NT]	[NT]	[NT]	[NT]	11/06/2024	[NT]
Date analysed	-			12/06/2024	[NT]	[NT]	[NT]	[NT]	12/06/2024	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	91	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	91	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	81	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	104	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	90	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	89	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	117	[NT]	[NT]	[NT]	[NT]	107	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			11/06/2024	[NT]	[NT]	[NT]	[NT]	11/06/2024	[NT]
Date analysed	-			11/06/2024	[NT]	[NT]	[NT]	[NT]	11/06/2024	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	113	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH $>C_{10}$ -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	113	[NT]
TRH $>C_{16}$ -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH $>C_{34}$ -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
Surrogate o-Terphenyl	%		Org-020	82	[NT]	[NT]	[NT]	[NT]	84	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			11/06/2024	[NT]	[NT]	[NT]	[NT]	11/06/2024	[NT]
Date analysed	-			11/06/2024	[NT]	[NT]	[NT]	[NT]	11/06/2024	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	106	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	100	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

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CERTIFICATE OF ANALYSIS 354460

Client Details

Client	EI Australia
Attention	Joel Heininger
Address	Suite 6.01, 55 Miller Street, Pyrmont, NSW, 2009

Sample Details

Your Reference	**E26160**
Number of Samples	1 Water
Date samples received	20/06/2024
Date completed instructions received	20/06/2024

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	25/06/2024
Date of Issue	25/06/2024

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Results Approved By
Giovanni Agosti, Group Technical Manager
Liam Timmins, Organics Supervisor

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water		
Our Reference		354460-1
Your Reference	UNITS	QT240620
Date Sampled		20/06/2024
Type of sample		Water
Date extracted	-	21/06/2024
Date analysed	-	24/06/2024
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	113
Surrogate Toluene-d8	%	99
Surrogate 4-Bromofluorobenzene	%	93

svTRH (C10-C40) in Water		
Our Reference		354460-1
Your Reference	UNITS	QT240620
Date Sampled		20/06/2024
Type of sample		Water
Date extracted	-	21/06/2024
Date analysed	-	22/06/2024
TRH C_{10} - C_{14}	μg/L	81
TRH C_{15} - C_{28}	μg/L	<100
TRH C_{29} - C_{36}	μg/L	<100
Total +ve TRH (C10-C36)	μg/L	80
TRH >C_{10} - C_{16}	μg/L	80
TRH >C_{10} - C_{16} less Naphthalene (F2)	μg/L	80
TRH >C_{16} - C_{34}	μg/L	<100
TRH >C_{34} - C_{40}	μg/L	<100
Total +ve TRH (>C10-C40)	μg/L	80
Surrogate o-Terphenyl	%	77

HM in water - dissolved		
Our Reference		354460-1
Your Reference	UNITS	QT240620
Date Sampled		20/06/2024
Type of sample		Water
Date prepared	-	21/06/2024
Date analysed	-	21/06/2024
Arsenic-Dissolved	µg/L	9
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	2
Copper-Dissolved	µg/L	1
Lead-Dissolved	µg/L	2
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	<1
Zinc-Dissolved	µg/L	4

Method ID	Methodology Summary
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Salt forms (e.g. FeO, PbO, ZnO) are determined stoichiometrically from the base metal concentration.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			21/06/2024	1	21/06/2024	24/06/2024		21/06/2024	[NT]
Date analysed	-			24/06/2024	1	24/06/2024	25/06/2024		24/06/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	1	<10	<10	0	105	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	1	<10	<10	0	105	[NT]
Benzene	µg/L	1	Org-023	<1	1	<1	<1	0	104	[NT]
Toluene	µg/L	1	Org-023	<1	1	<1	<1	0	104	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	104	[NT]
m+p-xylene	µg/L	2	Org-023	<2	1	<2	<2	0	106	[NT]
o-xylene	µg/L	1	Org-023	<1	1	<1	<1	0	109	[NT]
Naphthalene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	102	1	113	113	0	106	[NT]
Surrogate Toluene-d8	%		Org-023	99	1	99	100	1	100	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	97	1	93	97	4	110	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			21/06/2024	[NT]	[NT]	[NT]	[NT]	21/06/2024	[NT]
Date analysed	-			21/06/2024	[NT]	[NT]	[NT]	[NT]	21/06/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	123	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	124	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	112	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	123	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	124	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	112	[NT]
Surrogate o-Terphenyl	%		Org-020	91	[NT]	[NT]	[NT]	[NT]	121	[NT]

Client Reference: E26160

QUALITY CONTROL: HM in water - dissolved					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			21/06/2024	[NT]	[NT]	[NT]	[NT]	21/06/2024	[NT]
Date analysed	-			21/06/2024	[NT]	[NT]	[NT]	[NT]	21/06/2024	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	109	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	92	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Accreditation No. 2562

ANALYTICAL REPORT

CLIENT DETAILS

Contact	Sean Nolan
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	sean.nolan@eiaustralia.com.au
Project	**E26160 1 Veno St, Heathcote**
Order Number	**E26160**
Samples	19

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE255412 R0**
Date Received	19/10/2023
Date Reported	26/10/2023

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.
Sample #10: Chrysotile asbestos found as approx 0.4g fibrous mass(25x10x3mm) and loose fibre bundles
Asbestos analysed by Approved Identifier Ravee Sivasubramaniam .

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Chemist

Dong LIANG
Metals/Inorganics Team Leader

Ly Kim HA
Organic Section Head

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

VOC's in Soil [AN433] Tested: 24/10/2023

PARAMETER	UOM	LOR	BH1_0.2-0.3 SOIL - 18/10/2023 SE255412.001	BH2_0.2-0.3 SOIL - 18/10/2023 SE255412.002	BH3_0.3-0.4 SOIL - 18/10/2023 SE255412.003	BH3_0.7-0.8 SOIL - 18/10/2023 SE255412.004	BH4_0.3-0.4 SOIL - 18/10/2023 SE255412.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH4_0.6-0.7 SOIL - 18/10/2023 SE255412.006	BH5_0.3-0.4 SOIL - 18/10/2023 SE255412.007	BH5_0.8-0.9 SOIL - 18/10/2023 SE255412.008	BH6_0.2-0.3 SOIL - 18/10/2023 SE255412.009	BH7_0.2-0.3 SOIL - 18/10/2023 SE255412.010
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH7_0.5-0.6 SOIL - 18/10/2023 SE255412.011	BH8_0.1-0.2 SOIL - 18/10/2023 SE255412.012	BH9_0.1-0.2 SOIL - 18/10/2023 SE255412.013	BH10_0.2-0.3 SOIL - 18/10/2023 SE255412.014	BH10_0.5-0.6 SOIL - 18/10/2023 SE255412.015
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	QD_20231017 SOIL - 18/10/2023 SE255412.016	QTB1 SOIL - 18/10/2023 SE255412.018	QTS1 SOIL - 18/10/2023 SE255412.019
Benzene	mg/kg	0.1	<0.1	<0.1	[99%]
Toluene	mg/kg	0.1	<0.1	<0.1	[95%]
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	[93%]
m/p-xylene	mg/kg	0.2	<0.2	<0.2	[94%]
o-xylene	mg/kg	0.1	<0.1	<0.1	[93%]
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	-
Total BTEX*	mg/kg	0.6	<0.6	<0.6	-
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 24/10/2023

PARAMETER	UOM	LOR	BH1_0.2-0.3 SOIL - 18/10/2023 SE255412.001	BH2_0.2-0.3 SOIL - 18/10/2023 SE255412.002	BH3_0.3-0.4 SOIL - 18/10/2023 SE255412.003	BH3_0.7-0.8 SOIL - 18/10/2023 SE255412.004	BH4_0.3-0.4 SOIL - 18/10/2023 SE255412.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH4_0.6-0.7 SOIL - 18/10/2023 SE255412.006	BH5_0.3-0.4 SOIL - 18/10/2023 SE255412.007	BH5_0.8-0.9 SOIL - 18/10/2023 SE255412.008	BH6_0.2-0.3 SOIL - 18/10/2023 SE255412.009	BH7_0.2-0.3 SOIL - 18/10/2023 SE255412.010
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH7_0.5-0.6 SOIL - 18/10/2023 SE255412.011	BH8_0.1-0.2 SOIL - 18/10/2023 SE255412.012	BH9_0.1-0.2 SOIL - 18/10/2023 SE255412.013	BH10_0.2-0.3 SOIL - 18/10/2023 SE255412.014	BH10_0.5-0.6 SOIL - 18/10/2023 SE255412.015
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	QD_20231017 SOIL - 18/10/2023 SE255412.016
TRH C6-C9	mg/kg	20	<20
Benzene (F0)	mg/kg	0.1	<0.1
TRH C6-C10	mg/kg	25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 24/10/2023

PARAMETER	UOM	LOR	BH1_0.2-0.3 SOIL - 18/10/2023 SE255412.001	BH2_0.2-0.3 SOIL - 18/10/2023 SE255412.002	BH3_0.3-0.4 SOIL - 18/10/2023 SE255412.003	BH3_0.7-0.8 SOIL - 18/10/2023 SE255412.004	BH4_0.3-0.4 SOIL - 18/10/2023 SE255412.005
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	BH4_0.6-0.7 SOIL - 18/10/2023 SE255412.006	BH5_0.3-0.4 SOIL - 18/10/2023 SE255412.007	BH5_0.8-0.9 SOIL - 18/10/2023 SE255412.008	BH6_0.2-0.3 SOIL - 18/10/2023 SE255412.009	BH7_0.2-0.3 SOIL - 18/10/2023 SE255412.010
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	BH7_0.5-0.6 SOIL - 18/10/2023 SE255412.011	BH8_0.1-0.2 SOIL - 18/10/2023 SE255412.012	BH9_0.1-0.2 SOIL - 18/10/2023 SE255412.013	BH10_0.2-0.3 SOIL - 18/10/2023 SE255412.014	BH10_0.5-0.6 SOIL - 18/10/2023 SE255412.015
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: 24/10/2023 (continued)

PARAMETER	UOM	LOR	QD_20231017 SOIL - 18/10/2023 SE255412.016
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-C16	mg/kg	25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120
TRH C10-C36 Total	mg/kg	110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 24/10/2023

PARAMETER	UOM	LOR	BH1_0.2-0.3 SOIL - 18/10/2023 SE255412.001	BH2_0.2-0.3 SOIL - 18/10/2023 SE255412.002	BH3_0.3-0.4 SOIL - 18/10/2023 SE255412.003	BH3_0.7-0.8 SOIL - 18/10/2023 SE255412.004	BH4_0.3-0.4 SOIL - 18/10/2023 SE255412.005
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	0.2	<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	BH4_0.6-0.7 SOIL - 18/10/2023 SE255412.006	BH5_0.3-0.4 SOIL - 18/10/2023 SE255412.007	BH5_0.8-0.9 SOIL - 18/10/2023 SE255412.008	BH6_0.2-0.3 SOIL - 18/10/2023 SE255412.009	BH7_0.2-0.3 SOIL - 18/10/2023 SE255412.010
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: 24/10/2023 (continued)

			BH7_0.5-0.6 SOIL - 18/10/2023	BH8_0.1-0.2 SOIL - 18/10/2023	BH9_0.1-0.2 SOIL - 18/10/2023	BH10_0.2-0.3 SOIL - 18/10/2023	BH10_0.5-0.6 SOIL - 18/10/2023
PARAMETER	**UOM**	**LOR**	**SE255412.011**	**SE255412.012**	**SE255412.013**	**SE255412.014**	**SE255412.015**
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	<0.1	<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

OC Pesticides in Soil [AN420] Tested: 24/10/2023

PARAMETER	UOM	LOR	BH1_0.2-0.3 SOIL - 18/10/2023 SE255412.001	BH2_0.2-0.3 SOIL - 18/10/2023 SE255412.002	BH3_0.3-0.4 SOIL - 18/10/2023 SE255412.003	BH4_0.3-0.4 SOIL - 18/10/2023 SE255412.005	BH5_0.3-0.4 SOIL - 18/10/2023 SE255412.007
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<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	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 24/10/2023 (continued)

PARAMETER	UOM	LOR	BH6_0.2-0.3 SOIL - 18/10/2023 SE255412.009	BH7_0.2-0.3 SOIL - 18/10/2023 SE255412.010	BH8_0.1-0.2 SOIL - 18/10/2023 SE255412.012	BH9_0.1-0.2 SOIL - 18/10/2023 SE255412.013	BH10_0.5-0.6 SOIL - 18/10/2023 SE255412.015
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<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	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 24/10/2023

PARAMETER	UOM	LOR	BH1_0.2-0.3 SOIL - 18/10/2023 SE255412.001	BH2_0.2-0.3 SOIL - 18/10/2023 SE255412.002	BH3_0.3-0.4 SOIL - 18/10/2023 SE255412.003	BH4_0.3-0.4 SOIL - 18/10/2023 SE255412.005	BH5_0.3-0.4 SOIL - 18/10/2023 SE255412.007
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	BH6_0.2-0.3 SOIL - 18/10/2023 SE255412.009	BH7_0.2-0.3 SOIL - 18/10/2023 SE255412.010	BH8_0.1-0.2 SOIL - 18/10/2023 SE255412.012	BH9_0.1-0.2 SOIL - 18/10/2023 SE255412.013	BH10_0.5-0.6 SOIL - 18/10/2023 SE255412.015
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

PCBs in Soil [AN420] Tested: 24/10/2023

PARAMETER	UOM	LOR	BH1_0.2-0.3 SOIL - 18/10/2023 SE255412.001	BH2_0.2-0.3 SOIL - 18/10/2023 SE255412.002	BH3_0.3-0.4 SOIL - 18/10/2023 SE255412.003	BH4_0.3-0.4 SOIL - 18/10/2023 SE255412.005	BH5_0.3-0.4 SOIL - 18/10/2023 SE255412.007
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

PARAMETER	UOM	LOR	BH6_0.2-0.3 SOIL - 18/10/2023 SE255412.009	BH7_0.2-0.3 SOIL - 18/10/2023 SE255412.010	BH8_0.1-0.2 SOIL - 18/10/2023 SE255412.012	BH9_0.1-0.2 SOIL - 18/10/2023 SE255412.013	BH10_0.5-0.6 SOIL - 18/10/2023 SE255412.015
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 24/10/2023

PARAMETER	UOM	LOR	BH1_0.2-0.3 SOIL - 18/10/2023 SE255412.001	BH2_0.2-0.3 SOIL - 18/10/2023 SE255412.002	BH3_0.3-0.4 SOIL - 18/10/2023 SE255412.003	BH3_0.7-0.8 SOIL - 18/10/2023 SE255412.004	BH4_0.3-0.4 SOIL - 18/10/2023 SE255412.005
Arsenic, As	mg/kg	1	6	3	2	12	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	37	88	70	24	36
Copper, Cu	mg/kg	0.5	8.8	27	22	<0.5	13
Lead, Pb	mg/kg	1	9	6	4	10	44
Nickel, Ni	mg/kg	0.5	30	93	78	0.7	31
Zinc, Zn	mg/kg	2	26	60	49	6.4	85

PARAMETER	UOM	LOR	BH4_0.6-0.7 SOIL - 18/10/2023 SE255412.006	BH5_0.3-0.4 SOIL - 18/10/2023 SE255412.007	BH5_0.8-0.9 SOIL - 18/10/2023 SE255412.008	BH6_0.2-0.3 SOIL - 18/10/2023 SE255412.009	BH7_0.2-0.3 SOIL - 18/10/2023 SE255412.010
Arsenic, As	mg/kg	1	3	5	5	7	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	11	36	14	26	47
Copper, Cu	mg/kg	0.5	<0.5	6.3	<0.5	1.7	11
Lead, Pb	mg/kg	1	9	10	13	11	25
Nickel, Ni	mg/kg	0.5	1.4	26	0.5	8.9	40
Zinc, Zn	mg/kg	2	10	18	2.8	9.9	32

PARAMETER	UOM	LOR	BH7_0.5-0.6 SOIL - 18/10/2023 SE255412.011	BH8_0.1-0.2 SOIL - 18/10/2023 SE255412.012	BH9_0.1-0.2 SOIL - 18/10/2023 SE255412.013	BH10_0.2-0.3 SOIL - 18/10/2023 SE255412.014	BH10_0.5-0.6 SOIL - 18/10/2023 SE255412.015
Arsenic, As	mg/kg	1	4	7	4	2	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	30	35	48	14	8.0
Copper, Cu	mg/kg	0.5	<0.5	2.8	12	3.1	<0.5
Lead, Pb	mg/kg	1	11	5	9	3	12
Nickel, Ni	mg/kg	0.5	1.6	13	48	13	0.7
Zinc, Zn	mg/kg	2	7.7	8.0	32	7.7	2.1

PARAMETER	UOM	LOR	QD_20231017 SOIL - 18/10/2023 SE255412.016
Arsenic, As	mg/kg	1	7
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.5	19
Copper, Cu	mg/kg	0.5	1.3
Lead, Pb	mg/kg	1	10
Nickel, Ni	mg/kg	0.5	4.8
Zinc, Zn	mg/kg	2	6.9

Mercury in Soil [AN312] Tested: 24/10/2023

PARAMETER	UOM	LOR	BH1_0.2-0.3 SOIL - 18/10/2023 SE255412.001	BH2_0.2-0.3 SOIL - 18/10/2023 SE255412.002	BH3_0.3-0.4 SOIL - 18/10/2023 SE255412.003	BH3_0.7-0.8 SOIL - 18/10/2023 SE255412.004	BH4_0.3-0.4 SOIL - 18/10/2023 SE255412.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH4_0.6-0.7 SOIL - 18/10/2023 SE255412.006	BH5_0.3-0.4 SOIL - 18/10/2023 SE255412.007	BH5_0.8-0.9 SOIL - 18/10/2023 SE255412.008	BH6_0.2-0.3 SOIL - 18/10/2023 SE255412.009	BH7_0.2-0.3 SOIL - 18/10/2023 SE255412.010
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH7_0.5-0.6 SOIL - 18/10/2023 SE255412.011	BH8_0.1-0.2 SOIL - 18/10/2023 SE255412.012	BH9_0.1-0.2 SOIL - 18/10/2023 SE255412.013	BH10_0.2-0.3 SOIL - 18/10/2023 SE255412.014	BH10_0.5-0.6 SOIL - 18/10/2023 SE255412.015
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	QD_20231017 SOIL - 18/10/2023 SE255412.016
Mercury	mg/kg	0.05	<0.05

Moisture Content [AN002] Tested: 24/10/2023

PARAMETER	UOM	LOR	BH1_0.2-0.3 SOIL - 18/10/2023 SE255412.001	BH2_0.2-0.3 SOIL - 18/10/2023 SE255412.002	BH3_0.3-0.4 SOIL - 18/10/2023 SE255412.003	BH3_0.7-0.8 SOIL - 18/10/2023 SE255412.004	BH4_0.3-0.4 SOIL - 18/10/2023 SE255412.005
% Moisture	%w/w	1	9.5	9.5	11.6	16.6	10.6

PARAMETER	UOM	LOR	BH4_0.6-0.7 SOIL - 18/10/2023 SE255412.006	BH5_0.3-0.4 SOIL - 18/10/2023 SE255412.007	BH5_0.8-0.9 SOIL - 18/10/2023 SE255412.008	BH6_0.2-0.3 SOIL - 18/10/2023 SE255412.009	BH7_0.2-0.3 SOIL - 18/10/2023 SE255412.010
% Moisture	%w/w	1	8.7	10.0	14.5	15.3	13.3

PARAMETER	UOM	LOR	BH7_0.5-0.6 SOIL - 18/10/2023 SE255412.011	BH8_0.1-0.2 SOIL - 18/10/2023 SE255412.012	BH9_0.1-0.2 SOIL - 18/10/2023 SE255412.013	BH10_0.2-0.3 SOIL - 18/10/2023 SE255412.014	BH10_0.5-0.6 SOIL - 18/10/2023 SE255412.015
% Moisture	%w/w	1	20.4	13.3	11.6	8.5	12.3

PARAMETER	UOM	LOR	QD_20231017 SOIL - 18/10/2023 SE255412.016	QTB1 SOIL - 18/10/2023 SE255412.018
% Moisture	%w/w	1	20.9	<1.0

Fibre Identification in soil [AS4964/AN602] Tested: 25/10/2023

PARAMETER	UOM	LOR	BH1_0.2-0.3 SOIL - 18/10/2023 SE255412.001	BH2_0.2-0.3 SOIL - 18/10/2023 SE255412.002	BH3_0.3-0.4 SOIL - 18/10/2023 SE255412.003	BH4_0.3-0.4 SOIL - 18/10/2023 SE255412.005	BH5_0.3-0.4 SOIL - 18/10/2023 SE255412.007
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	BH6_0.2-0.3 SOIL - 18/10/2023 SE255412.009	BH7_0.2-0.3 SOIL - 18/10/2023 SE255412.010	BH8_0.1-0.2 SOIL - 18/10/2023 SE255412.012	BH9_0.1-0.2 SOIL - 18/10/2023 SE255412.013	BH10_0.5-0.6 SOIL - 18/10/2023 SE255412.015
Asbestos Detected	No unit	-	No	Yes	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	>0.01	<0.01	<0.01	<0.01

VOCs in Water [AN433] Tested: 23/10/2023

			QR_20231017 WATER - 18/10/2023
PARAMETER	**UOM**	**LOR**	**SE255412.017**
Benzene	µg/L	0.5	<0.5
Toluene	µg/L	0.5	0.6
Ethylbenzene	µg/L	0.5	<0.5
m/p-xylene	µg/L	1	<1
o-xylene	µg/L	0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5
Total BTEX	µg/L	3	<3
Naphthalene (VOC)*	µg/L	0.5	<0.5

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 23/10/2023

PARAMETER	UOM	LOR	QR_20231017 WATER - 18/10/2023 SE255412.017
TRH C6-C9	µg/L	40	<40
Benzene (F0)	µg/L	0.5	<0.5
TRH C6-C10	µg/L	50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 20/10/2023

PARAMETER	UOM	LOR	QR_20231017 WATER - 18/10/2023 SE255412.017
TRH C10-C14	µg/L	50	<50
TRH C15-C28	µg/L	200	<200
TRH C29-C36	µg/L	200	<200
TRH C37-C40	µg/L	200	<200
TRH >C10-C16	µg/L	60	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60
TRH >C16-C34 (F3)	µg/L	500	<500
TRH >C34-C40 (F4)	µg/L	500	<500
TRH C10-C40	µg/L	320	<320

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 23/10/2023

PARAMETER	UOM	LOR	QR_20231017 WATER - 18/10/2023 SE255412.017
Arsenic	µg/L	1	<1
Cadmium	µg/L	0.1	<0.1
Chromium	µg/L	1	<1
Copper	µg/L	1	<1
Lead	µg/L	1	<1
Nickel	µg/L	1	<1
Zinc	µg/L	5	<5

Mercury (dissolved) in Water [AN311(Perth)/AN312] **Tested: 20/10/2023**

PARAMETER	UOM	LOR	QR_20231017 WATER - 18/10/2023 SE255412.017
Mercury	mg/L	0.0001	<0.0001

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by AAS or ICP as per USEPA Method 200.8.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid , mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser . Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN318	Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting .
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be 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	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

AN602/AS4964	The sample can be reported "no asbestos found at the reporting limit (RL) of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

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

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

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

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

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

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

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

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

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

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

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Project	**E26160 1 Veno St, Heathcote**
Order Number	**E26160**
Samples	10

LABORATORY DETAILS

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SGS Reference	**SE255412 R0**
Date Received	19 Oct 2023
Date Reported	26 Oct 2023

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.
Sample #10: Chrysotile asbestos found as approx 0.4g fibrous mass(25x10x3mm) and loose fibre bundles
Asbestos analysed by Approved Identifier Ravee Sivasubramaniam .

SIGNATORIES

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

ANALYTICAL REPORT

RESULTS

Fibre Identification in soil

Method AS4964/AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE255412.001	BH1_0.2-0.3	Soil	89g Clay, Sand, Rocks	18 Oct 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE255412.002	BH2_0.2-0.3	Soil	69g Clay, Sand, Soil, Rocks, Bitumen	18 Oct 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE255412.003	BH3_0.3-0.4	Soil	148g Clay, Sand, Soil, Rocks	18 Oct 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE255412.005	BH4_0.3-0.4	Soil	89g Clay, Sand, Soil, Rocks	18 Oct 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE255412.007	BH5_0.3-0.4	Soil	55g Clay, Rocks	18 Oct 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE255412.009	BH6_0.2-0.3	Soil	95g Clay, Sand, Rocks	18 Oct 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE255412.010	BH7_0.2-0.3	Soil	87g Clay	18 Oct 2023	Chrysotile Asbestos Found at RL of 0.1g/kg	>0.01
SE255412.012	BH8_0.1-0.2	Soil	173g Clay, Sand, Rocks	18 Oct 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE255412.013	BH9_0.1-0.2	Soil	200g Clay, Sand, Rocks	18 Oct 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE255412.015	BH10_0.5-0.6	Soil	99g Clay, Sand, Rocks	18 Oct 2023	No Asbestos Found at RL of 0.1g/kg	<0.01

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be 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	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples , Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable ’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

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 .
			**	-	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 .

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

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Client	EI AUSTRALIA
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Telephone	61 2 95160722
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Email	sean.nolan@eiaustralia.com.au
Project	**E26160 1 Veno St, Heathcote -Addtional**
Order Number	**E26160**
Samples	19

LABORATORY DETAILS

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Address	Unit 16, 33 Maddox St Alexandria NSW 2015
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SGS Reference	**SE255412A R0**
Date Received	1/11/2023
Date Reported	6/11/2023

COMMENTS

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

SIGNATORIES

Dong LIANG

Metals/Inorganics Team Leader

Moisture Content [AN002] Tested: 2/11/2023

PARAMETER	UOM	LOR	BH2_0.2-0.3 SOIL - 18/10/2023 SE255412A.002	BH5_0.3-0.4 SOIL - 18/10/2023 SE255412A.007	BH9_0.1-0.2 SOIL - 18/10/2023 SE255412A.013
% Moisture	%w/w	1	9.0	10.1	13.8

pH in soil (1:5) [AN101] Tested: 3/11/2023

			BH2_0.2-0.3 SOIL - 18/10/2023	BH5_0.3-0.4 SOIL - 18/10/2023	BH9_0.1-0.2 SOIL - 18/10/2023
PARAMETER	**UOM**	**LOR**	**SE255412A.002**	**SE255412A.007**	**SE255412A.013**
pH	pH Units	0.1	9.4	8.0	8.6

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) [AN122] Tested: 6/11/2023

PARAMETER	UOM	LOR	BH2_0.2-0.3 SOIL - 18/10/2023 SE255412A.002	BH5_0.3-0.4 SOIL - 18/10/2023 SE255412A.007	BH9_0.1-0.2 SOIL - 18/10/2023 SE255412A.013
Exchangeable Calcium, Ca	mg/kg	2	5900	2400	2900
Exchangeable Calcium, Ca	meq/100g	0.01	29	12	15
Exchangeable Calcium Percentage*	%	0.1	71.8	75.6	62.8
Exchangeable Potassium, K	mg/kg	2	180	93	140
Exchangeable Potassium, K	meq/100g	0.01	0.47	0.24	0.36
Exchangeable Potassium Percentage*	%	0.1	1.2	1.5	1.5
Exchangeable Magnesium, Mg	mg/kg	2	390	320	360
Exchangeable Magnesium, Mg	meq/100g	0.02	3.2	2.6	2.9
Exchangeable Magnesium Percentage*	%	0.1	7.9	16.7	12.5
Exchangeable Sodium, Na	mg/kg	2	1800	220	1200
Exchangeable Sodium, Na	meq/100g	0.01	7.8	0.97	5.4
Exchangeable Sodium Percentage*	%	0.1	19.2	6.2	23.1
Cation Exchange Capacity	meq/100g	0.02	41	16	23

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.
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. ESP can be used to categorise the sodicity of the soil as below: ESP < 6% non-sodic ESP 6-15% sodic ESP >15% strongly sodic Method is referenced to Rayment and Lyons, 2011, sections 15D3 and 15N1.-

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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

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Client	EI AUSTRALIA
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Project	**E26160 1 Veno St, Heathcote**
Order Number	**E26160**
Samples	7

LABORATORY DETAILS

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Laboratory	SGS Alexandria Environmental
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Email	au.environmental.sydney@sgs.com
SGS Reference	**SE255779 R1**
Date Received	27/10/2023
Date Reported	3/11/2023

COMMENTS

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

This report cancels and supersedes the report No. SE255779 R0 dated 02.11.2023 issued by SGS Environment, Health and Safety due to amended sample IDs.

SIGNATORIES

Akheeqar BENIAMEEN	**Dong LIANG**	**Ly Kim HA**	**Ying Ying ZHANG**
Chemist	Metals/Inorganics Team Leader	Organic Section Head	Laboratory Technician

VOCs in Water [AN433] Tested: 31/10/2023

PARAMETER	UOM	LOR	BH2M-1 WATER - 26/10/2023 SE255779.001	BH7M-1 WATER - 26/10/2023 SE255779.002	BH10M-1 WATER - 26/10/2023 SE255779.003	GWQD_20231026 WATER - 26/10/2023 SE255779.004	GWQR_20231026 WATER - 26/10/2023 SE255779.005
Benzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.5	<0.5	**1.2**	**0.8**	<0.5	<0.5
Ethylbenzene	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
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
Total BTEX	µg/L	3	<3	<3	<3	<3	<3
Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
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	**5**	-	-
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	**3.0**	**2.4**	-	-
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	-	-
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	-	-
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	-	-
Bromoform (THM)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
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	-	-
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	-	-

VOCs in Water [AN433] Tested: 31/10/2023 (continued)

			BH2M-1 WATER - 26/10/2023	BH7M-1 WATER - 26/10/2023	BH10M-1 WATER - 26/10/2023	GWQD_20231026 WATER - 26/10/2023	GWQR_20231026 WATER - 26/10/2023
PARAMETER	**UOM**	**LOR**	**SE255779.001**	**SE255779.002**	**SE255779.003**	**SE255779.004**	**SE255779.005**
Bromobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
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	-	-
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 VOC	µg/L	10	<10	<10	<10	-	-

VOCs in Water [AN433] Tested: 31/10/2023 (continued)

			QTB1 WATER - 26/10/2023	QTS1 WATER - 26/10/2023
PARAMETER	**UOM**	**LOR**	**SE255779.006**	**SE255779.007**
Benzene	µg/L	0.5	<0.5	[100%]
Toluene	µg/L	0.5	<0.5	[102%]
Ethylbenzene	µg/L	0.5	<0.5	[101%]
m/p-xylene	µg/L	1	<1	[102%]
o-xylene	µg/L	0.5	<0.5	[102%]
Total Xylenes	µg/L	1.5	<1.5	-
Total BTEX	µg/L	3	<3	-
Naphthalene (VOC)*	µg/L	0.5	<0.5	[101%]
Dichlorodifluoromethane (CFC-12)	µg/L	5	-	-
Chloromethane	µg/L	5	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	-	-
Bromomethane	µg/L	10	-	-
Chloroethane	µg/L	5	-	-
Trichlorofluoromethane	µg/L	1	-	-
Acetone (2-propanone)	µg/L	10	-	-
Iodomethane	µg/L	5	-	-
1,1-dichloroethene	µg/L	0.5	-	-
Acrylonitrile	µg/L	0.5	-	-
Dichloromethane (Methylene chloride)	µg/L	5	-	-
Allyl chloride	µg/L	2	-	-
Carbon disulfide	µg/L	2	-	-
trans-1,2-dichloroethene	µg/L	0.5	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	2	-	-
1,1-dichloroethane	µg/L	0.5	-	-
Vinyl acetate*	µg/L	10	-	-
MEK (2-butanone)	µg/L	10	-	-
cis-1,2-dichloroethene	µg/L	0.5	-	-
Bromochloromethane	µg/L	0.5	-	-
Chloroform (THM)	µg/L	0.5	-	-
2,2-dichloropropane	µg/L	0.5	-	-
1,2-dichloroethane	µg/L	0.5	-	-
1,1,1-trichloroethane	µg/L	0.5	-	-
1,1-dichloropropene	µg/L	0.5	-	-
Carbon tetrachloride	µg/L	0.5	-	-
Dibromomethane	µg/L	0.5	-	-
1,2-dichloropropane	µg/L	0.5	-	-
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	-	-
2-nitropropane	µg/L	100	-	-
Bromodichloromethane (THM)	µg/L	0.5	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5	-	-
cis-1,3-dichloropropene	µg/L	0.5	-	-
trans-1,3-dichloropropene	µg/L	0.5	-	-
1,1,2-trichloroethane	µg/L	0.5	-	-
1,3-dichloropropane	µg/L	0.5	-	-
Dibromochloromethane (THM)	µg/L	0.5	-	-
2-hexanone (MBK)	µg/L	5	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	-	-
Chlorobenzene	µg/L	0.5	-	-
Bromoform (THM)	µg/L	0.5	-	-
Styrene (Vinyl benzene)	µg/L	0.5	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	-	-
1,2,3-trichloropropane	µg/L	0.5	-	-
trans-1,4-dichloro-2-butene	µg/L	1	-	-
Isopropylbenzene (Cumene)	µg/L	0.5	-	-

VOCs in Water [AN433] Tested: 31/10/2023 (continued)

PARAMETER	UOM	LOR	QTB1 WATER - 26/10/2023 SE255779.006	QTS1 WATER - 26/10/2023 SE255779.007
Bromobenzene	µg/L	0.5	-	-
n-propylbenzene	µg/L	0.5	-	-
2-chlorotoluene	µg/L	0.5	-	-
4-chlorotoluene	µg/L	0.5	-	-
1,3,5-trimethylbenzene	µg/L	0.5	-	-
tert-butylbenzene	µg/L	0.5	-	-
1,2,4-trimethylbenzene	µg/L	0.5	-	-
sec-butylbenzene	µg/L	0.5	-	-
1,3-dichlorobenzene	µg/L	0.5	-	-
1,4-dichlorobenzene	µg/L	0.3	-	-
p-isopropyltoluene	µg/L	0.5	-	-
1,2-dichlorobenzene	µg/L	0.5	-	-
n-butylbenzene	µg/L	0.5	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	-	-
1,2,4-trichlorobenzene	µg/L	0.5	-	-
Hexachlorobutadiene	µg/L	0.5	-	-
1,2,3-trichlorobenzene	µg/L	0.5	-	-
Total VOC	µg/L	10	-	-

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 31/10/2023

			BH2M-1	BH7M-1	BH10M-1	GWQD_20231026	GWQR_20231026
			WATER	WATER	WATER	WATER	WATER
			-	-	-	-	-
			26/10/2023	26/10/2023	26/10/2023	26/10/2023	26/10/2023
PARAMETER	**UOM**	**LOR**	**SE255779.001**	**SE255779.002**	**SE255779.003**	**SE255779.004**	**SE255779.005**
TRH C6-C9	µg/L	40	<40	<40	<40	<40	<40
Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
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

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 31/10/2023

			BH2M-1	BH7M-1	BH10M-1	GWQD_20231026	GWQR_20231026
			WATER	WATER	WATER	WATER	WATER
			-	-	-	-	-
			26/10/2023	26/10/2023	26/10/2023	26/10/2023	26/10/2023
PARAMETER	UOM	LOR	SE255779.001	SE255779.002	SE255779.003	SE255779.004	SE255779.005
TRH C10-C14	µg/L	50	<50	<50	<50	410	<50
TRH C15-C28	µg/L	200	<200	<200	<200	370	<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	430	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60	<60	430	<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	930	<320

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 31/10/2023

PARAMETER	UOM	LOR	BH2M-1 WATER - 26/10/2023 SE255779.001	BH7M-1 WATER - 26/10/2023 SE255779.002	BH10M-1 WATER - 26/10/2023 SE255779.003
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

Total Phenolics in Water [AN295] Tested: 31/10/2023

PARAMETER	UOM	LOR	BH2M-1 WATER - 26/10/2023 SE255779.001	BH7M-1 WATER - 26/10/2023 SE255779.002	BH10M-1 WATER - 26/10/2023 SE255779.003
Total Phenols	mg/L	0.05	<0.05	<0.05	<0.05

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 30/10/2023

			BH2M-1	BH7M-1	BH10M-1	GWQD_20231026	GWQR_20231026
			WATER	WATER	WATER	WATER	WATER
			-	-	-	-	-
			26/10/2023	26/10/2023	26/10/2023	26/10/2023	26/10/2023
PARAMETER	**UOM**	**LOR**	**SE255779.001**	**SE255779.002**	**SE255779.003**	**SE255779.004**	**SE255779.005**
Arsenic	µg/L	1	4	<1	<1	4	<1
Cadmium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	µg/L	1	1	<1	<1	1	<1
Copper	µg/L	1	<1	<1	2	<1	<1
Lead	µg/L	1	<1	<1	<1	<1	<1
Nickel	µg/L	1	2	13	5	2	<1
Zinc	µg/L	5	6	15	36	7	<5

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 30/10/2023

			BH2M-1 WATER - 26/10/2023	BH7M-1 WATER - 26/10/2023	BH10M-1 WATER - 26/10/2023	GWQD_20231026 WATER - 26/10/2023	GWQR_20231026 WATER - 26/10/2023
PARAMETER	**UOM**	**LOR**	**SE255779.001**	**SE255779.002**	**SE255779.003**	**SE255779.004**	**SE255779.005**
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

METHOD	METHODOLOGY SUMMARY
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN295	The water sample or extract of sample is distilled in a phosphoric acid stream. Phenolic compounds in the distillate react with a reagent stream of potassium hexacyanoferrate (III) and 4-Amino-2,3-dimethyl-3-pryazolin-5-one in an alkaline medium to form a coloured complex which is analysed spectrophotometrically onboard a continuous flow analyser.
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). Total PAH calculated from individual analyte detections at or above the limit of reporting .
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

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

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

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

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

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

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

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

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

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

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CERTIFICATE OF ANALYSIS 335745

Client Details

Client	EI Australia
Attention	Sean Nolan
Address	Suite 6.01, 55 Miller Street, Pyrmont, NSW, 2009

Sample Details

Your Reference	**E26160**
Number of Samples	1 Soil
Date samples received	19/10/2023
Date completed instructions received	19/10/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	26/10/2023
Date of Issue	25/10/2023

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Results Approved By
Dragana Tomas, Senior Chemist
Loren Bardwell, Development Chemist
Tim Toll, Chemist (FAS)

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference	UNITS	335745-1
Your Reference		QT_20231017
Date Sampled		17/10/2023
Type of sample		Soil
Date extracted	-	20/10/2023
Date analysed	-	21/10/2023
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	101

svTRH (C10-C40) in Soil		
Our Reference		335745-1
Your Reference	UNITS	QT_20231017
Date Sampled		17/10/2023
Type of sample		Soil
Date extracted	-	20/10/2023
Date analysed	-	24/10/2023
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
Total +ve TRH (C10-C36)	mg/kg	<50
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	71

Acid Extractable metals in soil		
Our Reference		335745-1
Your Reference	UNITS	QT_20231017
Date Sampled		17/10/2023
Type of sample		Soil
Date prepared	-	20/10/2023
Date analysed	-	20/10/2023
Arsenic	mg/kg	11
Cadmium	mg/kg	<0.4
Chromium	mg/kg	34
Copper	mg/kg	5
Lead	mg/kg	16
Mercury	mg/kg	<0.1
Nickel	mg/kg	16
Zinc	mg/kg	17

Moisture		
Our Reference		335745-1
Your Reference	UNITS	QT_20231017
Date Sampled		17/10/2023
Type of sample		Soil
Date prepared	-	20/10/2023
Date analysed	-	23/10/2023
Moisture	%	17

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			20/10/2023	[NT]	[NT]	[NT]	[NT]	20/10/2023	[NT]
Date analysed	-			21/10/2023	[NT]	[NT]	[NT]	[NT]	21/10/2023	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	118	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	118	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	107	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	119	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	122	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	120	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	132	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	104	[NT]	[NT]	[NT]	[NT]	105	[NT]

Client Reference: E26160

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			20/10/2023	[NT]	[NT]	[NT]	[NT]	20/10/2023	[NT]
Date analysed	-			24/10/2023	[NT]	[NT]	[NT]	[NT]	24/10/2023	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	103	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	96	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH $>C_{10}$ -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	103	[NT]
TRH $>C_{16}$ -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	96	[NT]
TRH $>C_{34}$ -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	77	[NT]	[NT]	[NT]	[NT]	88	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			20/10/2023	[NT]	[NT]	[NT]	[NT]	20/10/2023	[NT]
Date analysed	-			20/10/2023	[NT]	[NT]	[NT]	[NT]	20/10/2023	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	111	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	106	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	123	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

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CERTIFICATE OF ANALYSIS 336423

Client Details

Client	EI Australia
Attention	Lab Email
Address	Suite 6.01, 55 Miller Street, Pyrmont, NSW, 2009

Sample Details

Your Reference	**E26160, 1 Veno St, Heathcote**
Number of Samples	1 Water
Date samples received	27/10/2023
Date completed instructions received	27/10/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	03/11/2023
Date of Issue	02/11/2023

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Results Approved By
Dragana Tomas, Senior Chemist
Loren Bardwell, Development Chemist

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water		
Our Reference		336423-1
Your Reference	UNITS	GWQT_20231026
Date Sampled		26/10/2023
Type of sample		Water
Date extracted	-	30/10/2023
Date analysed	-	31/10/2023
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	103
Surrogate Toluene-d8	%	101
Surrogate 4-Bromofluorobenzene	%	104

svTRH (C10-C40) in Water		
Our Reference		336423-1
Your Reference	UNITS	GWQT_20231026
Date Sampled		26/10/2023
Type of sample		Water
Date extracted	-	30/10/2023
Date analysed	-	31/10/2023
TRH C_{10} - C_{14}	µg/L	300
TRH C_{15} - C_{28}	µg/L	180
TRH C_{29} - C_{36}	µg/L	100
Total +ve TRH (C10-C36)	µg/L	590
TRH >C_{10} - C_{16}	µg/L	310
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	310
TRH >C_{16} - C_{34}	µg/L	250
TRH >C_{34} - C_{40}	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	560
Surrogate o-Terphenyl	%	77

HM in water - dissolved		
Our Reference		336423-1
Your Reference	UNITS	GWQT_20231026
Date Sampled		26/10/2023
Type of sample		Water
Date prepared	-	30/10/2023
Date analysed	-	30/10/2023
Arsenic-Dissolved	µg/L	4
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	1
Copper-Dissolved	µg/L	4
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	2
Zinc-Dissolved	µg/L	5

Method ID	Methodology Summary
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Salt forms (e.g. FeO, PbO, ZnO) are determinined stoichiometrically from the base metal concentration.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

Client Reference: E26160, 1 Veno St, Heathcote

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			30/10/2023	[NT]	[NT]	[NT]	[NT]	30/10/2023	[NT]
Date analysed	-			31/10/2023	[NT]	[NT]	[NT]	[NT]	31/10/2023	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	104	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	104	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	105	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate Toluene-d8	%		Org-023	102	[NT]	[NT]	[NT]	[NT]	105	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	105	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			30/10/2023	[NT]	[NT]	[NT]	[NT]	30/10/2023	[NT]
Date analysed	-			31/10/2023	[NT]	[NT]	[NT]	[NT]	31/10/2023	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	76	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	76	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
Surrogate o-Terphenyl	%		Org-020	125	[NT]	[NT]	[NT]	[NT]	106	[NT]

QUALITY CONTROL: HM in water - dissolved					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			30/10/2023	[NT]	[NT]	[NT]	[NT]	30/10/2023	[NT]
Date analysed	-			30/10/2023	[NT]	[NT]	[NT]	[NT]	30/10/2023	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	83	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	106	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	88	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Appendix I – QA/QC Assessment

I1.1 Quality Assurance / Quality Control Program

Quality assurance comprises an assessment of the reliability of the field procedures and laboratory results against standard industry practices and the SAQP. A summary of the project QA/QC measures incorporated into this DSI is presented in **Table I-1**.

Table I-1 Project QC Measures

Task	Description	Project
Field QA/QC		
General	Work was to be undertaken following standard field procedures which are based on industry accepted standard practice.	Soil samples were collected directly from the augers. Soil samples were placed in 250 gram glass jars and plastic bags, which were filled to minimise headspace, and sealed using Teflon-coated lids. Groundwater samples were obtained using sample bottles/vials provided by the laboratory.
	All fieldwork was supervised by a suitably qualified and experienced scientist or engineer.	Yes
Soil Screening with PID	The PID was serviced and calibrated as per manufacturer requirements. PID calibrated at the beginning of each day of fieldwork.	Yes
Equipment Decontamination	Sampling equipment to be decontaminated after the collection of each soil sample by washing with phosphate-free detergent and potable water, followed by a final distilled water rinse. One rinsate blank would be collected and analysed for the primary contaminants. All results should be non-detect.	Yes 4 rinsate samples were collected in total. Two were previously collected during the PSI soil and groundwater investigation in October 2023. For the DSI, one was collected during the soil investigation on 6 June 2024 and the other was collected during the groundwater monitoring event on 20 June 2024. All concentrations were reported as below the detection limits, excluding toluene for soil investigation rinsate (QR1), which reported a concentration of 0.6 mg/kg. Considering the soil concentrations for toluene were all below detection limits, this minor detection is not considered to have impacted the reliability of the data.
Transport	Samples stored in a chilled cooler box and transported to the laboratories. To ensure the integrity of the samples from collection to receipt by the analytical laboratory, samples were sent by courier to the laboratories under ‘chain of custody’ describing sample preservation and transport duration.	Yes

Task	Description	Project
Trip Blanks	Trip blank samples were to be prepared and analysed by the primary laboratory for BTEX. Analytical results to be below the laboratory LOR, indicating satisfactory sample transport and handling conditions were achieved.	Four trip blank samples prepared by the primary laboratory were analysed for BTEX during soil and groundwater testing. All the other results were reported below the laboratory LOR, indicating that ideal sample transport and handling conditions were achieved (i.e. no cross-contamination of volatiles during sample transport and subsequent handling).
Trip Spikes	Trip spike samples were to be prepared and analysed by the primary laboratory for BTEX. Analytical results to be within 80-120% recovery, indicating satisfactory sample transport and handling conditions were achieved.	Four trip spike samples prepared by the primary laboratory were analysed for BTEX during soil and groundwater testing. All the other results were within the recovery acceptance levels, indicating that satisfactory sample transport and handling conditions were achieved (i.e. no loss of volatiles during sample transport and subsequent handling).
Duplicates	Field duplicate samples were to be analysed as follows (as per NEPM): ▪ intra-laboratory duplicates at a rate of 1 in 20 primary samples; and ▪ inter-laboratory duplicates at a rate of 1 in 20 primary samples. Field and laboratory acceptable limits between 30-50% RPD as stated by AS4482.1–2005. RPDs that exceed this range may be considered acceptable where: ▪ Results are less than 10 times the limits of reporting (LOR); ▪ Results are less than 20 times the LOR and the RPD is less than 50%; or ▪ Heterogeneous materials or volatile compounds are encountered. Non-compliance is to be documented in the report and the sample re-analysed or a higher level conservatively adopted.	The required sampling density of 1 per 20 duplicated primary samples was achieved and sufficient for the investigation. Laboratory duplicates prepared and analysed. Minor non-conformance, with negligible effects on data use for interpretative purposes. Non-conformance was reported for metal concentrations for both intra/inter-laboratory soil duplicates. This is likely due to heterogeneous fill material. Field QC samples and calculated RPD values are presented in **Table I-5** and **Table I-6**. Copies of laboratory reports are included in **Appendix H**.
Laboratory QA/QC		
Laboratory Analysis	The laboratories selected are NATA accredited for the analytes selected and perform their own internal QA/QC programs.	Yes SGS - primary laboratory Envirolab - secondary laboratory Laboratory QA/QC analyses are included in **Appendix J.**
	Appropriate detection limits were used for the analyses to be undertaken.	Practical Quantitation Limits for all tested parameters during the DSI are presented in laboratory analytical reports in **Appendix H.**
Holding Times	Holding times are the maximum permissible elapsed time in days from the collection of the sample to its extraction and/or analysis. All extraction and analyses should be completed within standard guidelines.	All samples were analysed within the holding times.

Task	Description	Project
Method Blanks	A method blank contains the reagents used to prepare the sample for final analysis. The purpose of this procedure is to identify contamination in the reagent materials and assess potential bias in the sample analysis due to contaminated reagents. The QC criterion aims to find no detectable contamination in the reagents. Each analysis procedure should be subject to a method blank analysis. The results of each should indicate that contaminants were not detected.	Yes
Laboratory Duplicates	Laboratory duplicates are field samples that are split in the laboratory and subsequently analysed a number of times in the same batch. These sub-samples are selected by the laboratory to assess the accuracy and precision of the analytical method. The selected laboratories should undertake QA/QC procedures such as calibration standards, laboratory control samples, surrogates, reference materials, sample duplicates and matrix spikes. Intra-laboratory duplicates should be performed at a frequency of 1 per 10 samples.	The Laboratory duplicate samples for the analysis batches showed most calculated RPDs that were within acceptable ranges and conformed to the DAC. Exceptions are noted to be: ▪ SE255599.01 (PSI, 2023) ‣ Total PAH (101%) ▪ SE255412 (PSI, 2023) ‣ Lead (60%) ▪ SE266429.003 ‣ Total PAH (105%) RPD failed acceptance criteria due to sample heterogeneity
Laboratory Control Standard	A laboratory control standard is a standard reference material used in preparing primary standards. The concentration should be equivalent to a mid-range standard to confirm the primary calibration. Laboratory control samples should be performed on a frequency of 1 per 20 samples or at least one per analytical run.	Assessment of laboratory control standard has been undertaken by the laboratory. All laboratory control standards were within acceptable ranges.
Matrix Spikes	Matric spikes are field samples to which a predetermined stock solution of known concentration has been added. The samples are then analysed for recovery of the known addition. Recoveries should be within the stated laboratory control limits of 70 to 130% and duplicates should have RPDs of less than 50%.	Assessment of matrix spikes has been undertaken by the laboratory. All laboratory control standards were within acceptable ranges.
Surrogate Spikes	Surrogate spikes provide a means of checking, for every analysis that no gross errors have occurred at any stage of the procedure leading to significant analyte loss. Recoveries should be within the stated laboratory control limits of 70 to 130%.	Assessment of surrogate spikes has been undertaken by the laboratory. All data quality objectives were met.
Conclusion	The QA/QC indicators should either all comply with the required standards or showed no variations that would have no significant effect on the quality of the data.	Assessment of the investigation QA/QC is presented in the following sections.

I1.2 Calculation of Relative Percentage Difference (RPD)

The RPD values were calculated using the following equation:

$$RPD = \frac{|C_O - C_R|}{[(C_O + C_R)/2]} \times 100$$

Where:

C_O = Concentration obtained for the primary sample; and

C_R = Concentration obtained for the blind replicate or split duplicate sample.

I2.1 Field QA/QC

Field QC Samples

The field (intra- / inter- laboratory) duplicate samples collected during the investigation are summarised in **Table I-2**. Inter-laboratory duplicates were analysed by the secondary laboratory, Envirolab.

Table I-2 Field QC Sampling Program

Matrix	Primary QA Sample	Duplicate (Primary Lab)	Triplicate (Secondary Lab)	Total Duplicates
Soil	BH3_0.3-0.4	QD_20231017	QT_20231017	2
	BH15_0.2-0.3	QD_20240606	QT_20240606	2
Groundwater	BH2M-1	GWQD_20231026	GWQT_20231026	2
	BH2M-2	QD240620	QT240620	2

I2.2 Field QC Summary

Review of the field data quality indicators is presented in **Table I-3** below.

Table I-3 Field Data Quality Indicators

QA Component	Data Quality Indicator(s)	Conformance
Accuracy – a quantitative measure of the closeness of reported data to the “true” value	SOPs appropriate and complied with	Yes
	Results for inter-laboratory (split field) duplicates acceptable	Part
Precision – A quantitative measure of the variability (or reproducibility) of data	SOPs appropriate and complied with	Yes
	Results for intra-laboratory (blind field) duplicates acceptable	Part
Completeness – A measure of the amount of useable data from a data collection activity	Each critical location sampled	Yes
	Samples collected at targeted locations and depth	Yes
	SAQP appropriate and complied with	Yes
	Experienced sampler	Yes
	Field documentation correct	Yes
Comparability – The	Same sampling method used on each occasion/location	Yes

QA Component	Data Quality Indicator(s)	Conformance
	Experienced sampler	Yes
	Same type of samples collected (filtered, size, fractions)	Yes
Representativeness – The confidence (expressed qualitatively) that data are representative of each medium present onsite	Appropriate media sampled according to SAQP	Yes
	Each media identified in SAQP sampled	Yes
	Appropriate sample collection methodologies, handling, storage and preservation techniques used	Yes

I2.3 Conclusion for the Field QA/QC

All field work, including equipment decontamination and sample preservation and transport, was conducted in accordance with the SAQP, which were devised with reference to industry-approved guidelines. Appropriate QC measures were integrated into each sampling event and the DQIs were met.

All samples, including field QC samples, were transported to the primary and secondary laboratories under refrigerated conditions, using strict COC procedures. Relevant documents (COC forms) were presented with the samples at the times of delivery. All supporting documents (COCs and SRAs) were completed in full and signed, where appropriate. EI considered the field QA/QC program carried out during the PSI to be appropriate.

I2.4 Laboratory QA/QC

Laboratory Accreditation

Primary and intra-laboratory duplicate samples were analysed by SGS (located in Alexandria NSW), with inter-laboratory duplicate samples analysed by Envirolab (located in Chatswood NSW). All laboratories are accredited by NATA for the analyses undertaken.

Laboratory QC Summary

Review of the laboratory data quality indicators is presented in **Table I-4** below.

Table I-4 Laboratory Data Quality Indicators

DQI	Item	Conformance
Completeness A measure of the amount of useable data (expressed as %) from a data collection activity	All critical samples analysed according to SAQP and proposal	**Yes**
	All analytes analysed according to SAQP in proposal	**Yes**
	Appropriate methods and PQLs	**Yes**
	Sample documentation complete	**Yes**
	Sample holding times complied with	**Yes**
Comparability The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event	Sample analytical methods used (including clean-up)	**Yes**
	Sample PQLs (justify/ quantify if different)	**Yes**
	Same laboratories (justify/ quantify if different)	**Yes**
	Same units (justify/ quantify if different)	**Yes**

DQI	Item	Conformance
Representativeness Confidence that data are representative of each media	All key samples analysed according to SAQP in the proposal	**Yes**
Precision A quantitative measure of the variability (or reproducibility) of data	Analysis of laboratory duplicates	**Yes**
	Analysis of field duplicates	**Yes**
	Analysis of laboratory-prepared volatile trip spikes	**Yes**
Accuracy A quantitative measure of the closeness of reported data to the true value	Analysis of field blanks	**Yes**
	Analysis of rinsate/ rinsate blanks	**Yes**
	Analysis of method blanks	**Yes**
	Analysis of matrix spikes (MS)	**Yes**
	Analysis of surrogate spikes	**Yes**
	Analysis of reference materials	Not applicable
	Analysis of laboratory control samples	**Yes**

I2.5 Conclusion for the Laboratory QA/QC

All contracted laboratories (SGS and Envirolab) were accredited by NATA for the analyses undertaken. All analytical procedures used were industry recognised and endorsed standard methods. Appropriate QC measures were integrated into each testing batch and the DQIs were met, or if not, the variability was suitably justified.

All final reports were submitted in full and included all requested analyses, as per the signed COC forms. EI considered the laboratory QA/QC programs carried out during the DSI to be appropriate.

I2.6 Summary of Project QA/QC

The sampling (including sample preservation, transport and decontamination procedures) and laboratory methods followed during this investigation were consistent with EI protocols. The project DQOs specified in **Section 5.2**, **Table 5-1** were considered to have been achieved. The adopted QA/QC program ensured that the data collated during the PSI were accurate, precise and representative of the site condition. It was therefore considered that the data were sufficiently precise and accurate and that the results could be used for DSI interpretative purposes.

Table I-5 Summary of QA/QC Results for Soil Investigation Samples

Site: 1 Veno Street, Heathcote NSW
Job No: E26160

Date	Sample Identification	Description	TRH				BTEX				Heavy Metals							
			F1	F2	F3	F4	Benzene	Toluene	Ethylbenzene	Xylene (total)	Arsenic	Cadmium	Chromium (Total)	Copper	Lead	Mercury	Nickel	Zinc
Intra-laboratory Duplicate																		
17-Oct-23	BH3_0.3-0.4	Primary Soil Sample	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	2	<0.3	70	22	4	<0.05	78.0	49
17-Oct-23	QD_20231017	Duplicate of BH3_0.3-0.4	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	7	<0.3	19	1	10	<0.05	4.8	7
		RPD	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***111.11***	***0.00***	**114.61**	**177.68**	***85.71***	***0.00***	**176.81**	**150.63**
6-Jun-25	BH15_0.2-0.3	Primary Soil Sample	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	5	<0.3	46	12	7	<0.05	49.0	35
6-Jun-25	QD_20240606	Duplicate of BH15_0.2-0.3	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	3	<0.3	70	17	8	<0.05	73.0	45
		RPD	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***50.00***	***0.00***	***41.38***	***34.48***	***13.33***	***0.00***	***39.34***	***25.00***
Inter-laboratory Duplicate																		
17-Oct-23	BH3_0.3-0.4	Primary Soil Sample	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	2	<0.3	70	22	4	<0.05	78.0	49
17-Oct-23	QT_20231017	Duplicate of BH3_0.3-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	11	<0.4	34	5	16	<0.1	16	17
		RPD	***0.00***	***NA***	***NA***	***NA***	***NA***	***NA***	***NA***	***NA***	***138.46***	***NA***	**69.23**	**125.93**	***120.00***	***NA***	**131.91**	**96.97**
6-Jun-25	BH15_0.2-0.3	Primary Soil Sample	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	5	<0.3	46	12	7	<0.05	49.0	35
6-Jun-25	QT1_20240606	Duplicate of BH15_0.2-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	4	<0.4	32	7	8	<0.1	23	21
		RPD	***0.00***	***NA***	***NA***	***NA***	***NA***	***NA***	***NA***	***NA***	***22.22***	***NA***	***35.90***	**52.63**	***13.33***	***NA***	**72.22**	***50.00***
Trip Blanks																		
17-Oct-23	QTB1	Trip Blank	-	-	-	-	<0.1	<0.1	<0.1	<0.3	-	-	-	-	-	-	-	-
17-Oct-23	QTS1	Trip Spike	-	-	-	-	[99%]	[95%]	[93%]	[93%]	-	-	-	-	-	-	-	-
6-Jun-25	TB	Trip Blank	-	-	-	-	<0.1	<0.1	<0.1	<0.3	-	-	-	-	-	-	-	-
6-Jun-25	TS	Trip Spike	-	-	-	-	[124%]	[116%]	[121%]	[116%]	-	-	-	-	-	-	-	-
Rinsate Blanks																		
17-Oct-23	QR1	De-ionised Water	<50	<60	<500	<500	<0.5	0.6	<0.5	<1.5	<1	<0.1	<1	<1	<1	<0.1	<1	<5
6-Jun-25	QR1	De-ionised Water	<50	<60	<500	<500	<0.5	0.6	<0.5	<1.5	<1	<0.1	<1	<1	<1	<0.1	<1	<5

▨	Indicates values where a single result is found to be less than detection, with the duplicate sample found to be over the detection limit.
■	RPD exceeds 30-50% range referenced from AS4482.1 (2005)

NOTE: All soil results are reported in mg/kg . All water results are reported in µg/L.

F1 = TRH C6-C10 less the sum of BTEX
F2 = TRH >C10-C16 less naphthalene
F3 = TRH >C16-C34

F4 = TRH >C34-C40

[1] Value shown is the lowest recovery value reported for xylenes

Table I-6 Summary of QA/QC Results for Groundwater Samples

Site: 1 Veno Street, Heathcote NSW
Job No: E26160

Date	Sample Identification	Description	TRH				BTEX				Heavy Metals							
			F1	F2	F3	F4	Benzene	Toluene	Ethylbenzene	Xylene (total)	Arsenic	Cadmium	Chromium (Total)	Copper	Lead	Mercury	Nickel	Zinc
Intra-laboratory Duplicate																		
26/10/2023	BH2M-1	Primary Groundwater Sample	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	4	<0.1	1	<1	<1	<0.1	2	6
26/10/2023	GWQD_20231026	Intra-laboratory Duplicate	<50	430	<500	<500	<0.5	<0.5	<0.5	<1.5	4	<0.1	1	<1	<1	<0.1	2	7
RPD			***0.00***	***160.87***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***15.38***
20/06/2024	BH2M-2	Primary Groundwater Sample	<50	180	<500	<500	<0.5	<0.5	<0.5	<1.5	1	<0.1	<1	2	<1	<0.1	<1	<5
20/06/2024	QD240620	Intra-laboratory Duplicate	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	1	<0.1	<1	<1	<1	<0.1	<1	<5
RPD			***0.00***	***114.29***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***80.00***	***0.00***	***0.00***	***0.00***	***0.00***
Inter-laboratory Duplicate																		
26/10/2023	BH2M-1	Primary Groundwater Sample	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	4	<0.1	1	<1	<1	<0.1	2	6
26/10/2023	GWQT_20231026	Inter-laboratory Duplicate	<10	310	250	<100	<1	<1	<1	<1	4	<0.1	1	4	<1	<0.05	2	5
RPD			***NA***	***147.06***	***100.00***	***NA***	***NA***	***NA***	***NA***	***NA***	***0.00***	***0.00***	***0.00***	***133.33***	***0.00***	***NA***	***0.00***	***18.18***
20/06/2024	BH2M-2	Primary Groundwater Sample	<50	180	<500	<500	<0.5	<0.5	<0.5	<1.5	1	<0.1	<1	2	<1	<0.1	<1	<5
20/06/2024	QT240620	Inter-laboratory Duplicate	<10	80	<100	<100	<1	<1	<1	<1	9	<0.1	2	1	2	<0.05	<1	4
RPD			***NA***	***76.92***	***NA***	***NA***	***NA***	***NA***	***NA***	***NA***	***160.00***	***0.00***	***80.00***	***66.67***	***80.00***	***NA***	***0.00***	***30.77***
Trip Blanks																		
26/10/2023	QTB1	Trip Blank	-	-	-	-	<0.5	<0.5	<0.5	<1.5	-	-	-	-	-	-	-	-
26/10/2023	QTS1	Trip Spike	-	-	-	-	[100%]	[102%]	[101%]	[100%] [1]	-	-	-	-	-	-	-	-
20/06/2024	QTB240620	Trip Blank	-	-	-	-	<0.5	<0.5	<0.5	<1.5	-	-	-	-	-	-	-	-
20/06/2024	QTS240620	Trip Spike	-	-	-	-	[96%]	[94%]	[101%]	[94%] [1]	-	-	-	-	-	-	-	-
Rinsate Blanks																		
26/10/2023	GWQR_20231026	De-ionised Water	<50	<60	<500	<500	<0.5	0.6	<0.5	<1.5	<1	<0.1	<1	<1	<1	<0.1	<1	<5
20/06/2024	QR240620	De-ionised Water	<50	<60	<500	<500	<0.5	0.6	<0.5	<1.5	<1	<0.1	<1	<1	<1	<0.1	<1	<5

▨	Indicates values where a single result is found to be less than detection, with the duplicate sample found to be over the detection limit.
■	RPD exceeds 30-50% range referenced from AS4482.1 (2005)

NOTE: All water results are reported in µg/L.

F1 = TRH C6-C10 less the sum of BTEX
F2 = TRH >C10-C16 less naphthalene
F3 = TRH >C16-C34
F4 = TRH >C34-C40

[1] Value shown is the lowest recovery value reported for xylenes

Appendix J – Laboratory QA/QC and DQOs

STATEMENT OF QA/QC PERFORMANCE

SE266428 R0

CLIENT DETAILS

Contact	Sean Nolan
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	sean.nolan@eiaustralia.com.au
Project	**E26160 1 Veno St, Heathcote**
Order Number	**E26160**
Samples	16

LABORATORY DETAILS

Manager	Shane McDermott
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE266428 R0**
Date Received	07 Jun 2024
Date Reported	17 Jun 2024

COMMENTS

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

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

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	15 Soil, 1 Water	Type of documentation received	COC
Date documentation received	7/6/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	15.5°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

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

Fibre Identification in soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH11_0.2-0.3	SE266428.001	LB314834	06 Jun 2024	07 Jun 2024	06 Jun 2025	13 Jun 2024	06 Jun 2025	17 Jun 2024
BH12_0.1-0.2	SE266428.003	LB314834	06 Jun 2024	07 Jun 2024	06 Jun 2025	13 Jun 2024	06 Jun 2025	17 Jun 2024
BH13_0.1-0.2	SE266428.004	LB314834	06 Jun 2024	07 Jun 2024	06 Jun 2025	13 Jun 2024	06 Jun 2025	17 Jun 2024
BH14_0.1-0.2	SE266428.006	LB314834	06 Jun 2024	07 Jun 2024	06 Jun 2025	13 Jun 2024	06 Jun 2025	17 Jun 2024
BH15_0.2-0.3	SE266428.008	LB314834	06 Jun 2024	07 Jun 2024	06 Jun 2025	13 Jun 2024	06 Jun 2025	17 Jun 2024
BH16_0.2-0.3	SE266428.010	LB314834	06 Jun 2024	07 Jun 2024	06 Jun 2025	13 Jun 2024	06 Jun 2025	17 Jun 2024
BH17_0.2-0.3	SE266428.011	LB314834	06 Jun 2024	07 Jun 2024	06 Jun 2025	13 Jun 2024	06 Jun 2025	17 Jun 2024

Mercury (dissolved) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR_20240606	SE266428.014	LB314636	06 Jun 2024	07 Jun 2024	04 Jul 2024	12 Jun 2024	04 Jul 2024	12 Jun 2024

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH11_0.2-0.3	SE266428.001	LB314542	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	12 Jun 2024
BH11_0.6-0.7	SE266428.002	LB314542	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	12 Jun 2024
BH12_0.1-0.2	SE266428.003	LB314542	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	12 Jun 2024
BH13_0.1-0.2	SE266428.004	LB314542	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	12 Jun 2024
BH13_0.5-0.7	SE266428.005	LB314542	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	12 Jun 2024
BH14_0.1-0.2	SE266428.006	LB314542	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	12 Jun 2024
BH14_0.5-0.6	SE266428.007	LB314542	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	12 Jun 2024
BH15_0.2-0.3	SE266428.008	LB314542	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	12 Jun 2024
BH15_0.6-0.7	SE266428.009	LB314542	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	12 Jun 2024
BH16_0.2-0.3	SE266428.010	LB314542	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	12 Jun 2024
BH17_0.2-0.3	SE266428.011	LB314542	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	12 Jun 2024
BH17_0.5-0.6	SE266428.012	LB314542	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	12 Jun 2024
QD_20240606	SE266428.013	LB314542	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	12 Jun 2024

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH11_0.2-0.3	SE266428.001	LB314535	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
BH11_0.6-0.7	SE266428.002	LB314535	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
BH12_0.1-0.2	SE266428.003	LB314535	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
BH13_0.1-0.2	SE266428.004	LB314535	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
BH13_0.5-0.7	SE266428.005	LB314535	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
BH14_0.1-0.2	SE266428.006	LB314535	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
BH14_0.5-0.6	SE266428.007	LB314535	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
BH15_0.2-0.3	SE266428.008	LB314535	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
BH15_0.6-0.7	SE266428.009	LB314535	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
BH16_0.2-0.3	SE266428.010	LB314535	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
BH17_0.2-0.3	SE266428.011	LB314535	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
BH17_0.5-0.6	SE266428.012	LB314535	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
QD_20240606	SE266428.013	LB314535	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
TB	SE266428.015	LB314535	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024

OC Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH11_0.2-0.3	SE266428.001	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH11_0.6-0.7	SE266428.002	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH12_0.1-0.2	SE266428.003	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH13_0.1-0.2	SE266428.004	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH13_0.5-0.7	SE266428.005	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH14_0.1-0.2	SE266428.006	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH14_0.5-0.6	SE266428.007	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH15_0.2-0.3	SE266428.008	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH15_0.6-0.7	SE266428.009	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH16_0.2-0.3	SE266428.010	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH17_0.2-0.3	SE266428.011	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH17_0.5-0.6	SE266428.012	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
QD_20240606	SE266428.013	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024

HOLDING TIME SUMMARY

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

OP Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH11_0.2-0.3	SE266428.001	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH11_0.6-0.7	SE266428.002	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH12_0.1-0.2	SE266428.003	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH13_0.1-0.2	SE266428.004	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH13_0.5-0.7	SE266428.005	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH14_0.1-0.2	SE266428.006	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH14_0.5-0.6	SE266428.007	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH15_0.2-0.3	SE266428.008	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH15_0.6-0.7	SE266428.009	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH16_0.2-0.3	SE266428.010	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH17_0.2-0.3	SE266428.011	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH17_0.5-0.6	SE266428.012	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
QD_20240606	SE266428.013	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH11_0.2-0.3	SE266428.001	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH11_0.6-0.7	SE266428.002	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH12_0.1-0.2	SE266428.003	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH13_0.1-0.2	SE266428.004	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH13_0.5-0.7	SE266428.005	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH14_0.1-0.2	SE266428.006	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH14_0.5-0.6	SE266428.007	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH15_0.2-0.3	SE266428.008	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH15_0.6-0.7	SE266428.009	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH16_0.2-0.3	SE266428.010	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH17_0.2-0.3	SE266428.011	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH17_0.5-0.6	SE266428.012	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
QD_20240606	SE266428.013	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024

PCBs in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH11_0.2-0.3	SE266428.001	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH11_0.6-0.7	SE266428.002	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH12_0.1-0.2	SE266428.003	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH13_0.1-0.2	SE266428.004	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH13_0.5-0.7	SE266428.005	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH14_0.1-0.2	SE266428.006	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH14_0.5-0.6	SE266428.007	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH15_0.2-0.3	SE266428.008	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH15_0.6-0.7	SE266428.009	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH16_0.2-0.3	SE266428.010	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH17_0.2-0.3	SE266428.011	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH17_0.5-0.6	SE266428.012	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
QD_20240606	SE266428.013	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH11_0.2-0.3	SE266428.001	LB314539	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024
BH11_0.6-0.7	SE266428.002	LB314539	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024
BH12_0.1-0.2	SE266428.003	LB314539	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024
BH13_0.1-0.2	SE266428.004	LB314539	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024
BH13_0.5-0.7	SE266428.005	LB314539	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024
BH14_0.1-0.2	SE266428.006	LB314539	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024
BH14_0.5-0.6	SE266428.007	LB314539	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024
BH15_0.2-0.3	SE266428.008	LB314539	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024
BH15_0.6-0.7	SE266428.009	LB314539	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024
BH16_0.2-0.3	SE266428.010	LB314539	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024
BH17_0.2-0.3	SE266428.011	LB314539	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024
BH17_0.5-0.6	SE266428.012	LB314539	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024
QD_20240606	SE266428.013	LB314539	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024

HOLDING TIME SUMMARY

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
QR_20240606	SE266428.014	LB314475	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	11 Jun 2024

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
BH11_0.2-0.3	SE266428.001	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024
BH11_0.6-0.7	SE266428.002	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024
BH12_0.1-0.2	SE266428.003	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024
BH13_0.1-0.2	SE266428.004	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024
BH13_0.5-0.7	SE266428.005	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024
BH14_0.1-0.2	SE266428.006	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024
BH14_0.5-0.6	SE266428.007	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024
BH15_0.2-0.3	SE266428.008	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024
BH15_0.6-0.7	SE266428.009	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024
BH16_0.2-0.3	SE266428.010	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024
BH17_0.2-0.3	SE266428.011	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024
BH17_0.5-0.6	SE266428.012	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024
QD_20240606	SE266428.013	LB314526	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR_20240606	SE266428.014	LB314744	06 Jun 2024	07 Jun 2024	13 Jun 2024	13 Jun 2024	23 Jul 2024	17 Jun 2024

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH11_0.2-0.3	SE266428.001	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH11_0.6-0.7	SE266428.002	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH12_0.1-0.2	SE266428.003	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH13_0.1-0.2	SE266428.004	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH13_0.5-0.7	SE266428.005	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH14_0.1-0.2	SE266428.006	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH14_0.5-0.6	SE266428.007	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH15_0.2-0.3	SE266428.008	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH15_0.6-0.7	SE266428.009	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH16_0.2-0.3	SE266428.010	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH17_0.2-0.3	SE266428.011	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH17_0.5-0.6	SE266428.012	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
QD_20240606	SE266428.013	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
TB	SE266428.015	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
TS	SE266428.016	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024

VOCs in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR_20240606	SE266428.014	LB314756	06 Jun 2024	07 Jun 2024	20 Jun 2024	13 Jun 2024	20 Jun 2024	14 Jun 2024

Volatile Petroleum Hydrocarbons in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH11_0.2-0.3	SE266428.001	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH11_0.6-0.7	SE266428.002	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH12_0.1-0.2	SE266428.003	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH13_0.1-0.2	SE266428.004	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH13_0.5-0.7	SE266428.005	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH14_0.1-0.2	SE266428.006	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH14_0.5-0.6	SE266428.007	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH15_0.2-0.3	SE266428.008	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH15_0.6-0.7	SE266428.009	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH16_0.2-0.3	SE266428.010	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH17_0.2-0.3	SE266428.011	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH17_0.5-0.6	SE266428.012	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
QD_20240606	SE266428.013	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024

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

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
TB	SE266428.015	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
TS	SE266428.016	LB314534	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024

Volatile Petroleum Hydrocarbons in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR_20240606	SE266428.014	LB314756	06 Jun 2024	07 Jun 2024	20 Jun 2024	13 Jun 2024	20 Jun 2024	14 Jun 2024

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

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

OC Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH11_0.2-0.3	SE266428.001	%	60 - 130%	109
	BH12_0.1-0.2	SE266428.003	%	60 - 130%	109
	BH13_0.1-0.2	SE266428.004	%	60 - 130%	102
	BH14_0.1-0.2	SE266428.006	%	60 - 130%	108
	BH15_0.2-0.3	SE266428.008	%	60 - 130%	111
	BH16_0.2-0.3	SE266428.010	%	60 - 130%	109
	BH17_0.2-0.3	SE266428.011	%	60 - 130%	118

OP Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH11_0.2-0.3	SE266428.001	%	60 - 130%	99
	BH12_0.1-0.2	SE266428.003	%	60 - 130%	90
	BH13_0.1-0.2	SE266428.004	%	60 - 130%	95
	BH14_0.1-0.2	SE266428.006	%	60 - 130%	97
	BH15_0.2-0.3	SE266428.008	%	60 - 130%	96
	BH16_0.2-0.3	SE266428.010	%	60 - 130%	95
	BH17_0.2-0.3	SE266428.011	%	60 - 130%	92
d14-p-terphenyl (Surrogate)	BH11_0.2-0.3	SE266428.001	%	60 - 130%	107
	BH12_0.1-0.2	SE266428.003	%	60 - 130%	103
	BH13_0.1-0.2	SE266428.004	%	60 - 130%	101
	BH14_0.1-0.2	SE266428.006	%	60 - 130%	98
	BH15_0.2-0.3	SE266428.008	%	60 - 130%	107
	BH16_0.2-0.3	SE266428.010	%	60 - 130%	104
	BH17_0.2-0.3	SE266428.011	%	60 - 130%	104

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH11_0.2-0.3	SE266428.001	%	70 - 130%	99
	BH11_0.6-0.7	SE266428.002	%	70 - 130%	101
	BH12_0.1-0.2	SE266428.003	%	70 - 130%	90
	BH13_0.1-0.2	SE266428.004	%	70 - 130%	95
	BH13_0.5-0.7	SE266428.005	%	70 - 130%	102
	BH14_0.1-0.2	SE266428.006	%	70 - 130%	97
	BH14_0.5-0.6	SE266428.007	%	70 - 130%	91
	BH15_0.2-0.3	SE266428.008	%	70 - 130%	96
	BH15_0.6-0.7	SE266428.009	%	70 - 130%	98
	BH16_0.2-0.3	SE266428.010	%	70 - 130%	95
	BH17_0.2-0.3	SE266428.011	%	70 - 130%	92
	BH17_0.5-0.6	SE266428.012	%	70 - 130%	103
d14-p-terphenyl (Surrogate)	BH11_0.2-0.3	SE266428.001	%	70 - 130%	107
	BH11_0.6-0.7	SE266428.002	%	70 - 130%	102
	BH12_0.1-0.2	SE266428.003	%	70 - 130%	103
	BH13_0.1-0.2	SE266428.004	%	70 - 130%	101
	BH13_0.5-0.7	SE266428.005	%	70 - 130%	105
	BH14_0.1-0.2	SE266428.006	%	70 - 130%	98
	BH14_0.5-0.6	SE266428.007	%	70 - 130%	99
	BH15_0.2-0.3	SE266428.008	%	70 - 130%	107
	BH15_0.6-0.7	SE266428.009	%	70 - 130%	99
	BH16_0.2-0.3	SE266428.010	%	70 - 130%	104
	BH17_0.2-0.3	SE266428.011	%	70 - 130%	104
	BH17_0.5-0.6	SE266428.012	%	70 - 130%	104
d5-nitrobenzene (Surrogate)	BH11_0.2-0.3	SE266428.001	%	70 - 130%	100
	BH11_0.6-0.7	SE266428.002	%	70 - 130%	98
	BH12_0.1-0.2	SE266428.003	%	70 - 130%	94
	BH13_0.1-0.2	SE266428.004	%	70 - 130%	107
	BH13_0.5-0.7	SE266428.005	%	70 - 130%	96
	BH14_0.1-0.2	SE266428.006	%	70 - 130%	96
	BH14_0.5-0.6	SE266428.007	%	70 - 130%	90
	BH15_0.2-0.3	SE266428.008	%	70 - 130%	100
	BH15_0.6-0.7	SE266428.009	%	70 - 130%	101
	BH16_0.2-0.3	SE266428.010	%	70 - 130%	103
	BH17_0.2-0.3	SE266428.011	%	70 - 130%	100

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

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason 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)	BH17_0.5-0.6	SE266428.012	%	70 - 130%	104

PCBs in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	BH11_0.2-0.3	SE266428.001	%	60 - 130%	109
	BH12_0.1-0.2	SE266428.003	%	60 - 130%	109
	BH13_0.1-0.2	SE266428.004	%	60 - 130%	103
	BH14_0.1-0.2	SE266428.006	%	60 - 130%	108
	BH15_0.2-0.3	SE266428.008	%	60 - 130%	112
	BH16_0.2-0.3	SE266428.010	%	60 - 130%	109
	BH17_0.2-0.3	SE266428.011	%	60 - 130%	118

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH11_0.2-0.3	SE266428.001	%	60 - 130%	83
	BH11_0.6-0.7	SE266428.002	%	60 - 130%	86
	BH12_0.1-0.2	SE266428.003	%	60 - 130%	94
	BH13_0.1-0.2	SE266428.004	%	60 - 130%	83
	BH13_0.5-0.7	SE266428.005	%	60 - 130%	84
	BH14_0.1-0.2	SE266428.006	%	60 - 130%	84
	BH14_0.5-0.6	SE266428.007	%	60 - 130%	78
	BH15_0.2-0.3	SE266428.008	%	60 - 130%	85
	BH15_0.6-0.7	SE266428.009	%	60 - 130%	72
	BH16_0.2-0.3	SE266428.010	%	60 - 130%	80
	BH17_0.2-0.3	SE266428.011	%	60 - 130%	81
	BH17_0.5-0.6	SE266428.012	%	60 - 130%	85
	QD_20240606	SE266428.013	%	60 - 130%	87
	TB	SE266428.015	%	60 - 130%	86
	TS	SE266428.016	%	60 - 130%	91
d4-1,2-dichloroethane (Surrogate)	BH11_0.2-0.3	SE266428.001	%	60 - 130%	84
	BH11_0.6-0.7	SE266428.002	%	60 - 130%	95
	BH12_0.1-0.2	SE266428.003	%	60 - 130%	92
	BH13_0.1-0.2	SE266428.004	%	60 - 130%	85
	BH13_0.5-0.7	SE266428.005	%	60 - 130%	88
	BH14_0.1-0.2	SE266428.006	%	60 - 130%	79
	BH14_0.5-0.6	SE266428.007	%	60 - 130%	83
	BH15_0.2-0.3	SE266428.008	%	60 - 130%	90
	BH15_0.6-0.7	SE266428.009	%	60 - 130%	75
	BH16_0.2-0.3	SE266428.010	%	60 - 130%	84
	BH17_0.2-0.3	SE266428.011	%	60 - 130%	83
	BH17_0.5-0.6	SE266428.012	%	60 - 130%	88
	QD_20240606	SE266428.013	%	60 - 130%	82
	TB	SE266428.015	%	60 - 130%	84
	TS	SE266428.016	%	60 - 130%	86
d8-toluene (Surrogate)	BH11_0.2-0.3	SE266428.001	%	60 - 130%	87
	BH11_0.6-0.7	SE266428.002	%	60 - 130%	95
	BH12_0.1-0.2	SE266428.003	%	60 - 130%	93
	BH13_0.1-0.2	SE266428.004	%	60 - 130%	88
	BH13_0.5-0.7	SE266428.005	%	60 - 130%	90
	BH14_0.1-0.2	SE266428.006	%	60 - 130%	92
	BH14_0.5-0.6	SE266428.007	%	60 - 130%	84
	BH15_0.2-0.3	SE266428.008	%	60 - 130%	90
	BH15_0.6-0.7	SE266428.009	%	60 - 130%	76
	BH16_0.2-0.3	SE266428.010	%	60 - 130%	85
	BH17_0.2-0.3	SE266428.011	%	60 - 130%	88
	BH17_0.5-0.6	SE266428.012	%	60 - 130%	90
	QD_20240606	SE266428.013	%	60 - 130%	89
	TB	SE266428.015	%	60 - 130%	89
	TS	SE266428.016	%	60 - 130%	89

VOCs in Water

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

Parameter	Sample Name	Sample Number	Units

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 %
Bromofluorobenzene (Surrogate)	QR_20240606	SE266428.014	%	40 - 130%	98
d4-1,2-dichloroethane (Surrogate)	QR_20240606	SE266428.014	%	40 - 130%	110
d8-toluene (Surrogate)	QR_20240606	SE266428.014	%	40 - 130%	99

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH11_0.2-0.3	SE266428.001	%	60 - 130%	83
	BH11_0.6-0.7	SE266428.002	%	60 - 130%	86
	BH12_0.1-0.2	SE266428.003	%	60 - 130%	94
	BH13_0.1-0.2	SE266428.004	%	60 - 130%	83
	BH13_0.5-0.7	SE266428.005	%	60 - 130%	84
	BH14_0.1-0.2	SE266428.006	%	60 - 130%	84
	BH14_0.5-0.6	SE266428.007	%	60 - 130%	78
	BH15_0.2-0.3	SE266428.008	%	60 - 130%	85
	BH15_0.6-0.7	SE266428.009	%	60 - 130%	72
	BH16_0.2-0.3	SE266428.010	%	60 - 130%	80
	BH17_0.2-0.3	SE266428.011	%	60 - 130%	81
	BH17_0.5-0.6	SE266428.012	%	60 - 130%	85
	QD_20240606	SE266428.013	%	60 - 130%	87
d4-1,2-dichloroethane (Surrogate)	BH11_0.2-0.3	SE266428.001	%	60 - 130%	84
	BH11_0.6-0.7	SE266428.002	%	60 - 130%	95
	BH12_0.1-0.2	SE266428.003	%	60 - 130%	92
	BH13_0.1-0.2	SE266428.004	%	60 - 130%	85
	BH13_0.5-0.7	SE266428.005	%	60 - 130%	88
	BH14_0.1-0.2	SE266428.006	%	60 - 130%	79
	BH14_0.5-0.6	SE266428.007	%	60 - 130%	83
	BH15_0.2-0.3	SE266428.008	%	60 - 130%	90
	BH15_0.6-0.7	SE266428.009	%	60 - 130%	75
	BH16_0.2-0.3	SE266428.010	%	60 - 130%	84
	BH17_0.2-0.3	SE266428.011	%	60 - 130%	83
	BH17_0.5-0.6	SE266428.012	%	60 - 130%	88
	QD_20240606	SE266428.013	%	60 - 130%	82
d8-toluene (Surrogate)	BH11_0.2-0.3	SE266428.001	%	60 - 130%	87
	BH11_0.6-0.7	SE266428.002	%	60 - 130%	95
	BH12_0.1-0.2	SE266428.003	%	60 - 130%	93
	BH13_0.1-0.2	SE266428.004	%	60 - 130%	88
	BH13_0.5-0.7	SE266428.005	%	60 - 130%	90
	BH14_0.1-0.2	SE266428.006	%	60 - 130%	92
	BH14_0.5-0.6	SE266428.007	%	60 - 130%	84
	BH15_0.2-0.3	SE266428.008	%	60 - 130%	90
	BH15_0.6-0.7	SE266428.009	%	60 - 130%	76
	BH16_0.2-0.3	SE266428.010	%	60 - 130%	85
	BH17_0.2-0.3	SE266428.011	%	60 - 130%	88
	BH17_0.5-0.6	SE266428.012	%	60 - 130%	90
	QD_20240606	SE266428.013	%	60 - 130%	89

Volatile Petroleum Hydrocarbons in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QR_20240606	SE266428.014	%	40 - 130%	98
d4-1,2-dichloroethane (Surrogate)	QR_20240606	SE266428.014	%	60 - 130%	110
d8-toluene (Surrogate)	QR_20240606	SE266428.014	%	40 - 130%	99

METHOD BLANKS

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
LB314636.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB314542.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB314526.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	109

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB314526.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	99
		d14-p-terphenyl (Surrogate)	%	-	106

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB314526.001	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

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
LB314526.001	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)	%	-	101
	2-fluorobiphenyl (Surrogate)	%	-	99
	d14-p-terphenyl (Surrogate)	%	-	106

PCBs in Soil Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB314526.001	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	TCMX (Surrogate)	%	-	109

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB314539.001	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
LB314475.001	Arsenic	µg/L	1	<1
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Copper	µg/L	1	<1
	Lead	µg/L	1	<1
	Nickel	µg/L	1	<1
	Zinc	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB314526.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

TRH (Total Recoverable Hydrocarbons) in Water Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB314744.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

VOC's in Soil Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR

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
LB314534.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	112
		d8-toluene (Surrogate)	%	-	116
		Bromofluorobenzene (Surrogate)	%	-	83
	Totals	Total BTEX*	mg/kg	0.6	<0.6

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result
LB314756.001	Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	0.5	<0.5
		Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1
		o-xylene	µg/L	0.5	<0.5
	Polycyclic VOCs	Naphthalene (VOC)*	µg/L	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	100
		d8-toluene (Surrogate)	%	-	105
		Bromofluorobenzene (Surrogate)	%	-	81

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB314534.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	112

Volatile Petroleum Hydrocarbons in Water

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

Sample Number		Parameter	Units	LOR	Result
LB314756.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	100
		d8-toluene (Surrogate)	%	-	105
		Bromofluorobenzene (Surrogate)	%	-	81

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266428.003	LB314542.014	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 %
SE266428.002	LB314535.011	% Moisture	%w/w	1	20.2	19.4	35	4
SE266428.012	LB314535.022	% Moisture	%w/w	1	17.0	16.7	36	2

OC Pesticides in Soil Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266428.003	LB314526.014		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	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
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	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
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	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
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.16	30	0
SE266428.011	LB314526.027		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	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
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	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
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	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
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0

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

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

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

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

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

OC Pesticides in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266428.011	LB314526.027		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.18	0.16	30	9

OP Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266428.003	LB314526.014		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	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	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
SE266428.011	LB314526.027		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	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	-	0.5	0.4	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	5

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266428.003	LB314526.014		Naphthalene	mg/kg	0.1	0.2	0.2	92	1
			2-methylnaphthalene	mg/kg	0.1	0.1	0.1	101	2
			1-methylnaphthalene	mg/kg	0.1	0.3	0.3	69	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	0.2	0.1	95	4
			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

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 %
SE266428.003	LB314526.014		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	44	1
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	3
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
SE266428.011	LB314526.027		Naphthalene	mg/kg	0.1	<0.1	<0.1	171	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	198	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	0.2	107	52
			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	158	2
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	104	92
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	4
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	5

PCBs in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266428.003	LB314526.014		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	TCMX (Surrogate)	mg/kg	-	0	0	30	0
SE266428.011	LB314526.028		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	TCMX (Surrogate)	mg/kg	-	0	0	30	9

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

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

Original	Duplicate		Parameter	Units	LOR

DUPLICATES

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

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

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

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

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

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

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266428.003	LB314539.014		Arsenic, As	mg/kg	1	3	3	64	17
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.5	72	89	31	21
			Copper, Cu	mg/kg	0.5	31	22	32	31
			Nickel, Ni	mg/kg	0.5	73	89	31	19
			Lead, Pb	mg/kg	1	3	4	58	26
			Zinc, Zn	mg/kg	2	47	55	34	15

Trace Metals (Dissolved) in Water by ICPMS

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266424.003	LB314475.014		Arsenic	µg/L	1	13	13	23	0
			Chromium	µg/L	1	<1	<1	200	0
			Copper	µg/L	1	5	5	35	6
			Lead	µg/L	1	290	290	15	1
			Zinc	µg/L	5	1600	1500	15	5

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266428.003	LB314526.014		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
SE266428.011	LB314526.027		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

TRH (Total Recoverable Hydrocarbons) in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266430.028	LB314744.025		TRH C10-C14	µg/L	50	0	0	200	0
			TRH C15-C28	µg/L	200	0	0	200	0
			TRH C29-C36	µg/L	200	0	0	200	0
			TRH C37-C40	µg/L	200	0	0	200	0
			TRH C10-C40	µg/L	320	0	0	200	0
		TRH F Bands	TRH >C10-C16	µg/L	60	0	0	200	0
			TRH >C10-C16 - Naphthalene (F2)	µg/L	60	-0.1815467076	0	200	0
			TRH >C16-C34 (F3)	µg/L	500	0	0	200	0
			TRH >C34-C40 (F4)	µg/L	500	0	0	200	0
SE266505.024	LB314744.026		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
SE266629.004	LB314744.024		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

DUPLICATES

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

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

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

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

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

TRH (Total Recoverable Hydrocarbons) in Water (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266629.004	LB314744.024		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

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266428.001	LB314534.015	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.4	9.3	50	10
			d8-toluene (Surrogate)	mg/kg	-	8.7	9.3	50	7
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.3	8.9	50	8
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE266428.011	LB314534.027	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.3	7.1	50	16
			d8-toluene (Surrogate)	mg/kg	-	8.8	7.3	50	20
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.1	6.8	50	17
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

VOCs in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266518.001	LB314756.025	Monocyclic Aromatic	Benzene	µg/L	0.5	<0.0005	<0.0005	200	0
			Toluene	µg/L	0.5	<0.0005	<0.0005	200	0
			Ethylbenzene	µg/L	0.5	<0.0005	<0.0005	200	0
			m/p-xylene	µg/L	1	<0.001	<0.001	200	0
			o-xylene	µg/L	0.5	<0.0005	<0.0005	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.0005	<0.0005	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	0.0	0.0	30	12
			d8-toluene (Surrogate)	µg/L	-	0.0	0.0	30	25
			Bromofluorobenzene (Surrogate)	µg/L	-	0.0	0.0	30	16
		Totals	Total BTEX	µg/L	3	<0.003	<0.003	200	0

Volatile Petroleum Hydrocarbons in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266428.001	LB314534.015		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.4	9.3	50	10
			d8-toluene (Surrogate)	mg/kg	-	8.7	9.3	50	7
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.3	8.9	50	8
		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
SE266428.011	LB314534.027		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	-	8.3	7.1	50	16
			d8-toluene (Surrogate)	mg/kg	-	8.8	7.3	50	20
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.1	6.8	50	17
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

DUPLICATES

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

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

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

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

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

Volatile Petroleum Hydrocarbons in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266492.001	LB314756.024		TRH C6-C10	µg/L	50	<50	<50	200	0
			TRH C6-C9	µg/L	40	<50	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.4	12.1	30	15
			d8-toluene (Surrogate)	µg/L	-	10.2	10.0	30	2
			Bromofluorobenzene (Surrogate)	µg/L	-	8.6	9.9	30	14
		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
SE266518.001	LB314756.025		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	-	12.9	11.4	30	12
			d8-toluene (Surrogate)	µg/L	-	7.7	9.8	30	25
			Bromofluorobenzene (Surrogate)	µg/L	-	8.0	9.4	30	16
		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 SAMPLES

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 %
LB314542.002		Mercury	mg/kg	0.05	0.21	0.2	80 - 120	105

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314526.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	97
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	93
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	98
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	96
		Endrin	mg/kg	0.2	0.2	0.2	60 - 140	106
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	106
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.15	40 - 130	105

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314526.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	91
		Diazinon (Dimpylate)	mg/kg	0.5	1.8	2	60 - 140	92
		Dichlorvos	mg/kg	0.5	1.4	2	60 - 140	71
		Ethion	mg/kg	0.2	1.5	2	60 - 140	76
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	98
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	105

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314526.002		Naphthalene	mg/kg	0.1	4.2	4	60 - 140	106
		Acenaphthylene	mg/kg	0.1	4.0	4	60 - 140	101
		Acenaphthene	mg/kg	0.1	4.4	4	60 - 140	110
		Phenanthrene	mg/kg	0.1	4.3	4	60 - 140	108
		Anthracene	mg/kg	0.1	4.7	4	60 - 140	118
		Fluoranthene	mg/kg	0.1	4.5	4	60 - 140	111
		Pyrene	mg/kg	0.1	4.6	4	60 - 140	115
		Benzo(a)pyrene	mg/kg	0.1	4.5	4	60 - 140	112
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	96
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	98
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	105

PCBs in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314526.002		Arochlor 1260	mg/kg	0.2	0.5	0.4	60 - 140	115

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 %
LB314539.002		Arsenic, As	mg/kg	1	350	318.22	80 - 120	109
		Cadmium, Cd	mg/kg	0.3	4.0	4.81	70 - 130	82
		Chromium, Cr	mg/kg	0.5	42	38.31	80 - 120	110
		Copper, Cu	mg/kg	0.5	310	290	80 - 120	109
		Nickel, Ni	mg/kg	0.5	200	187	80 - 120	107
		Lead, Pb	mg/kg	1	99	89.9	80 - 120	110
		Zinc, Zn	mg/kg	2	290	273	80 - 120	106

Trace Metals (Dissolved) in Water by ICPMS

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314475.002		Arsenic	µg/L	1	19	20	80 - 120	95
		Cadmium	µg/L	0.1	20	20	80 - 120	100
		Chromium	µg/L	1	20	20	80 - 120	102
		Copper	µg/L	1	21	20	80 - 120	106
		Lead	µg/L	1	21	20	80 - 120	107
		Nickel	µg/L	1	21	20	80 - 120	103
		Zinc	µg/L	5	21	20	80 - 120	107

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

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314526.002		TRH C10-C14	mg/kg	20	36	40	60 - 140	90
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	86
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	76
	TRH F Bands	TRH >C10-C16	mg/kg	25	36	40	60 - 140	91
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	79
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	81

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314744.002		TRH C10-C14	µg/L	50	1300	1200	60 - 140	108
		TRH C15-C28	µg/L	200	1400	1200	60 - 140	117
		TRH C29-C36	µg/L	200	1400	1200	60 - 140	114
	TRH F Bands	TRH >C10-C16	µg/L	60	1400	1200	60 - 140	116
		TRH >C16-C34 (F3)	µg/L	500	1400	1200	60 - 140	113
		TRH >C34-C40 (F4)	µg/L	500	720	600	60 - 140	119

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314534.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.2	5	60 - 140	84
		Toluene	mg/kg	0.1	4.3	5	60 - 140	86
		Ethylbenzene	mg/kg	0.1	4.4	5	60 - 140	88
		m/p-xylene	mg/kg	0.2	8.9	10	60 - 140	89
		o-xylene	mg/kg	0.1	4.5	5	60 - 140	89
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.4	10	70 - 130	94
		d8-toluene (Surrogate)	mg/kg	-	9.2	10	70 - 130	92
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.7	10	70 - 130	97

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314756.002	Monocyclic Aromatic	Benzene	µg/L	0.5	53	45.45	60 - 140	117
		Toluene	µg/L	0.5	54	45.45	60 - 140	119
		Ethylbenzene	µg/L	0.5	49	45.45	60 - 140	108
		m/p-xylene	µg/L	1	99	90.9	60 - 140	109
		o-xylene	µg/L	0.5	49	45.45	60 - 140	109
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.5	10	60 - 140	105
		d8-toluene (Surrogate)	µg/L	-	11.2	10	70 - 130	112
		Bromofluorobenzene (Surrogate)	µg/L	-	10.1	10	70 - 130	101

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314534.002		TRH C6-C10	mg/kg	25	64	92.5	60 - 140	69
		TRH C6-C9	mg/kg	20	56	80	60 - 140	70
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.4	10	70 - 130	94
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.7	10	70 - 130	97
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	38	62.5	60 - 140	60

Volatile Petroleum Hydrocarbons in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314756.002		TRH C6-C10	µg/L	50	930	946.63	60 - 140	98
		TRH C6-C9	µg/L	40	820	818.71	60 - 140	100
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.5	10	60 - 140	105
		d8-toluene (Surrogate)	µg/L	-	11.2	10	70 - 130	112
		Bromofluorobenzene (Surrogate)	µg/L	-	10.1	10	70 - 130	101
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	630	639.67	60 - 140	98

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%
SE266428.014	LB314636.004	Mercury	mg/L	0.0001	0.0019	<0.0001	0.008	99

Mercury in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266475.003	LB314542.004	Mercury	mg/kg	0.05	0.26	<0.05	0.2	119

OC Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266475.003	LB314526.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	96
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	98
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	96
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	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	86
			Endrin	mg/kg	0.2	0.2	<0.2	0.2	96
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	108
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
			Total OC VIC EPA	mg/kg	1	1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.17	-	110

OP Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266475.003	LB314526.004		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	<0.2	2	90
			Diazinon (Dimpylate)	mg/kg	0.5	1.9	<0.5	2	93
			Dichlorvos	mg/kg	0.5	1.2	<0.5	2	62
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	1.6	<0.2	2	81
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	6.5	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	-	95
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	101

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR

MATRIX SPIKES

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%
SE266475.003	LB314526.004		Naphthalene	mg/kg	0.1	4.1	<0.1	4	102
			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	99
			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	4.1	<0.1	4	101
			Anthracene	mg/kg	0.1	4.4	<0.1	4	108
			Fluoranthene	mg/kg	0.1	4.3	<0.1	4	106
			Pyrene	mg/kg	0.1	4.3	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	4.3	<0.1	4	107
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	4.3	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.4	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.5	<0.3	-	-
			Total PAH (18)	mg/kg	0.8	34	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.4	-	95
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	-	95
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	101

PCBs in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266475.003	LB314526.004		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	118
			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	TCMX (Surrogate)	mg/kg	-	0	0	-	110

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%
SE266475.003	LB314539.004	Arsenic, As	mg/kg	1	53	6	50	95
		Cadmium, Cd	mg/kg	0.3	46	<0.3	50	91
		Chromium, Cr	mg/kg	0.5	58	13	50	91
		Copper, Cu	mg/kg	0.5	56	8.9	50	94
		Nickel, Ni	mg/kg	0.5	50	4.0	50	92
		Lead, Pb	mg/kg	1	61	15	50	91
		Zinc, Zn	mg/kg	2	70	30	50	80

Trace Metals (Dissolved) in Water by ICPMS

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266503.001	LB314475.004	Zinc	μg/L	5	210	200	20	88

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266475.003	LB314526.004	TRH C10-C14	mg/kg	20	54	<20	40	125
		TRH C15-C28	mg/kg	45	56	<45	40	119
		TRH C29-C36	mg/kg	45	<45	<45	40	94
		TRH C37-C40	mg/kg	100	<100	<100	-	-

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%
SE266475.003	LB314526.004		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	56	<25	40	128
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	56	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	100
			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%
SE266475.003	LB314534.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.5	<0.1	5	89
			Toluene	mg/kg	0.1	4.6	<0.1	5	92
			Ethylbenzene	mg/kg	0.1	4.7	<0.1	5	94
			m/p-xylene	mg/kg	0.2	9.7	<0.2	10	96
			o-xylene	mg/kg	0.1	4.9	<0.1	5	98
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.3	7.5	10	83
			d8-toluene (Surrogate)	mg/kg	-	8.0	7.1	10	80
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.0	7.9	10	90
		Totals	Total BTEX*	mg/kg	0.6	28	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	15	<0.3	-	-

VOCs in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Original	Spike	Recovery%
SE266401.001	LB314756.023	Monocyclic Aromatic	Benzene	µg/L	0.5	0	45.45	110
			Toluene	µg/L	0.5	0	45.45	104
			Ethylbenzene	µg/L	0.5	0.00314819241	45.45	110
			m/p-xylene	µg/L	1	0.01044067269	90.9	113
			o-xylene	µg/L	0.5	0.00358202461	45.45	113
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	0.12768179646	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	11.8903090157	-	88
			d8-toluene (Surrogate)	µg/L	-	10.3417952271	-	87
			Bromofluorobenzene (Surrogate)	µg/L	-	8.84816025023	-	103
		Totals	Total BTEX	µg/L	3	0	-	-

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266475.003	LB314534.005		TRH C6-C10	mg/kg	25	67	<25	92.5	72
			TRH C6-C9	mg/kg	20	59	<20	80	73
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.3	7.5	10	83
			d8-toluene (Surrogate)	mg/kg	-	8.0	7.1	10	80
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.0	7.9	-	90
		VPH F Bands	Benzene (F0)	mg/kg	0.1	4.5	<0.1	-	-
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	39	<25	62.5	61

Volatile Petroleum Hydrocarbons in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Original	Spike	Recovery%
SE266401.001	LB314756.023		TRH C6-C10	µg/L	50	0.03261141467	946.63	91
			TRH C6-C9	µg/L	40	0.03444886689	818.71	92
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	11.8903090157	-	88
			d8-toluene (Surrogate)	µg/L	-	10.3417952271	-	87
			Bromofluorobenzene (Surrogate)	µg/L	-	8.84816025023	-	103
		VPH F Bands	Benzene (F0)	µg/L	0.5	0	-	-
			TRH C6-C10 minus BTEX (F1)	µg/L	50	0.03261141467	639.67	88

MATRIX SPIKE DUPLICATES

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

QC Sample	Sample Number	Parameter	Units	LOR

FOOTNOTES

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.

STATEMENT OF QA/QC PERFORMANCE

SE266428A R0

CLIENT DETAILS

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Project	**E26160 1 Veno St, Heathcote-Additional**
Order Number	**E26160**
Samples	16

LABORATORY DETAILS

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SGS Reference	**SE266428A R0**
Date Received	18 Jun 2024
Date Reported	20 Jun 2024

COMMENTS

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

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

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	2 Soil	Type of documentation received	Email
Date documentation received	18/6/2024@1:29pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	15.5°C
Sample container provider	SGS	Turnaround time requested	Two Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

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

Metals in TCLP Extract by ICPOES

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH12_0.1-0.2	SE266428A.003	LB315499	06 Jun 2024	18 Jun 2024	03 Dec 2024	20 Jun 2024	03 Dec 2024	20 Jun 2024
BH14_0.1-0.2	SE266428A.006	LB315499	06 Jun 2024	18 Jun 2024	03 Dec 2024	20 Jun 2024	03 Dec 2024	20 Jun 2024

TCLP (Toxicity Characteristic Leaching Procedure) for Metals

Method: ME-(AU)-[ENV]AN006

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH12_0.1-0.2	SE266428A.003	LB315420	06 Jun 2024	18 Jun 2024	03 Dec 2024	19 Jun 2024	23 Jun 2024	20 Jun 2024
BH14_0.1-0.2	SE266428A.006	LB315420	06 Jun 2024	18 Jun 2024	03 Dec 2024	19 Jun 2024	23 Jun 2024	20 Jun 2024

SURROGATES

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 required for this job.

METHOD BLANKS

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.

Metals in TCLP Extract by ICPOES

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

Sample Number	Parameter	Units	LOR	Result
LB315499.001	Nickel, Ni	mg/L	0.005	<0.005

DUPLICATES

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

No duplicates were required 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.

Metals in TCLP Extract by ICPOES

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315499.002	Nickel, Ni	mg/L	0.005	0.51	0.5	80 - 120	101

MATRIX SPIKES

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 required for this job.

MATRIX SPIKE DUPLICATES

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.

STATEMENT OF QA/QC PERFORMANCE

SE266429 R0

CLIENT DETAILS

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Project	**E26160 1 Veno St Heathcote**
Order Number	**E26160**
Samples	3

LABORATORY DETAILS

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SGS Reference	**SE266429 R0**
Date Received	07 Jun 2024
Date Reported	17 Jun 2024

COMMENTS

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

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

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

Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	1 item

SAMPLE SUMMARY

Sample counts by matrix	3 Soil	Type of documentation received	COC
Date documentation received	7/6/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	15.5°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

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

Fibre Identification in soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7M_DL1_0.1-0.2	SE266429.001	LB314834	06 Jun 2024	07 Jun 2024	06 Jun 2025	13 Jun 2024	06 Jun 2025	17 Jun 2024
BH7M_DL2_0.2-0.3	SE266429.002	LB314834	06 Jun 2024	07 Jun 2024	06 Jun 2025	13 Jun 2024	06 Jun 2025	17 Jun 2024
BH7M_DL3_0.1-0.2	SE266429.003	LB314834	06 Jun 2024	07 Jun 2024	06 Jun 2025	13 Jun 2024	06 Jun 2025	17 Jun 2024

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7M_DL1_0.1-0.2	SE266429.001	LB314567	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	13 Jun 2024
BH7M_DL2_0.2-0.3	SE266429.002	LB314567	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	13 Jun 2024
BH7M_DL3_0.1-0.2	SE266429.003	LB314567	06 Jun 2024	07 Jun 2024	04 Jul 2024	11 Jun 2024	04 Jul 2024	13 Jun 2024

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7M_DL1_0.1-0.2	SE266429.001	LB314565	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
BH7M_DL2_0.2-0.3	SE266429.002	LB314565	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024
BH7M_DL3_0.1-0.2	SE266429.003	LB314565	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	16 Jun 2024	12 Jun 2024

OC Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7M_DL1_0.1-0.2	SE266429.001	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH7M_DL2_0.2-0.3	SE266429.002	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH7M_DL3_0.1-0.2	SE266429.003	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024

OP Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7M_DL1_0.1-0.2	SE266429.001	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH7M_DL2_0.2-0.3	SE266429.002	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH7M_DL3_0.1-0.2	SE266429.003	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7M_DL1_0.1-0.2	SE266429.001	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH7M_DL2_0.2-0.3	SE266429.002	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH7M_DL3_0.1-0.2	SE266429.003	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024

PCBs in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7M_DL1_0.1-0.2	SE266429.001	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH7M_DL2_0.2-0.3	SE266429.002	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024
BH7M_DL3_0.1-0.2	SE266429.003	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	13 Jun 2024

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7M_DL1_0.1-0.2	SE266429.001	LB314566	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024
BH7M_DL2_0.2-0.3	SE266429.002	LB314566	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024
BH7M_DL3_0.1-0.2	SE266429.003	LB314566	06 Jun 2024	07 Jun 2024	03 Dec 2024	11 Jun 2024	03 Dec 2024	12 Jun 2024

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
BH7M_DL1_0.1-0.2	SE266429.001	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024
BH7M_DL2_0.2-0.3	SE266429.002	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024
BH7M_DL3_0.1-0.2	SE266429.003	LB314511	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	21 Jul 2024	17 Jun 2024

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7M_DL1_0.1-0.2	SE266429.001	LB314564	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH7M_DL2_0.2-0.3	SE266429.002	LB314564	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH7M_DL3_0.1-0.2	SE266429.003	LB314564	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024

Volatile Petroleum Hydrocarbons in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7M_DL1_0.1-0.2	SE266429.001	LB314564	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH7M_DL2_0.2-0.3	SE266429.002	LB314564	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024
BH7M_DL3_0.1-0.2	SE266429.003	LB314564	06 Jun 2024	07 Jun 2024	20 Jun 2024	11 Jun 2024	20 Jun 2024	13 Jun 2024

SURROGATES

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)	BH7M_DL1_0.1-0.2	SE266429.001	%	60 - 130%	102
	BH7M_DL2_0.2-0.3	SE266429.002	%	60 - 130%	107
	BH7M_DL3_0.1-0.2	SE266429.003	%	60 - 130%	110

OP Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH7M_DL1_0.1-0.2	SE266429.001	%	60 - 130%	101
	BH7M_DL2_0.2-0.3	SE266429.002	%	60 - 130%	88
	BH7M_DL3_0.1-0.2	SE266429.003	%	60 - 130%	97
d14-p-terphenyl (Surrogate)	BH7M_DL1_0.1-0.2	SE266429.001	%	60 - 130%	105
	BH7M_DL2_0.2-0.3	SE266429.002	%	60 - 130%	100
	BH7M_DL3_0.1-0.2	SE266429.003	%	60 - 130%	99

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH7M_DL1_0.1-0.2	SE266429.001	%	70 - 130%	101
	BH7M_DL2_0.2-0.3	SE266429.002	%	70 - 130%	88
	BH7M_DL3_0.1-0.2	SE266429.003	%	70 - 130%	97
d14-p-terphenyl (Surrogate)	BH7M_DL1_0.1-0.2	SE266429.001	%	70 - 130%	105
	BH7M_DL2_0.2-0.3	SE266429.002	%	70 - 130%	100
	BH7M_DL3_0.1-0.2	SE266429.003	%	70 - 130%	99
d5-nitrobenzene (Surrogate)	BH7M_DL1_0.1-0.2	SE266429.001	%	70 - 130%	103
	BH7M_DL2_0.2-0.3	SE266429.002	%	70 - 130%	81
	BH7M_DL3_0.1-0.2	SE266429.003	%	70 - 130%	98

PCBs in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	BH7M_DL1_0.1-0.2	SE266429.001	%	60 - 130%	100
	BH7M_DL2_0.2-0.3	SE266429.002	%	60 - 130%	105
	BH7M_DL3_0.1-0.2	SE266429.003	%	60 - 130%	108

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH7M_DL1_0.1-0.2	SE266429.001	%	60 - 130%	96
	BH7M_DL2_0.2-0.3	SE266429.002	%	60 - 130%	82
	BH7M_DL3_0.1-0.2	SE266429.003	%	60 - 130%	86
d4-1,2-dichloroethane (Surrogate)	BH7M_DL1_0.1-0.2	SE266429.001	%	60 - 130%	89
	BH7M_DL2_0.2-0.3	SE266429.002	%	60 - 130%	72
	BH7M_DL3_0.1-0.2	SE266429.003	%	60 - 130%	81
d8-toluene (Surrogate)	BH7M_DL1_0.1-0.2	SE266429.001	%	60 - 130%	93
	BH7M_DL2_0.2-0.3	SE266429.002	%	60 - 130%	77
	BH7M_DL3_0.1-0.2	SE266429.003	%	60 - 130%	84

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH7M_DL1_0.1-0.2	SE266429.001	%	60 - 130%	96
	BH7M_DL2_0.2-0.3	SE266429.002	%	60 - 130%	82
	BH7M_DL3_0.1-0.2	SE266429.003	%	60 - 130%	86
d4-1,2-dichloroethane (Surrogate)	BH7M_DL1_0.1-0.2	SE266429.001	%	60 - 130%	89
	BH7M_DL2_0.2-0.3	SE266429.002	%	60 - 130%	72
	BH7M_DL3_0.1-0.2	SE266429.003	%	60 - 130%	81
d8-toluene (Surrogate)	BH7M_DL1_0.1-0.2	SE266429.001	%	60 - 130%	93
	BH7M_DL2_0.2-0.3	SE266429.002	%	60 - 130%	77
	BH7M_DL3_0.1-0.2	SE266429.003	%	60 - 130%	84

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 in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB314567.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB314511.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	106

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB314511.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	103
		d14-p-terphenyl (Surrogate)	%	-	102

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB314511.001	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

METHOD BLANKS

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
LB314511.001		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)	%	-	89
		2-fluorobiphenyl (Surrogate)	%	-	103
		d14-p-terphenyl (Surrogate)	%	-	102

PCBs in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB314511.001		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	TCMX (Surrogate)	%	-	104

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

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

Sample Number		Parameter	Units	LOR	Result
LB314566.001		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
LB314511.001		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
LB314564.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	89
		d8-toluene (Surrogate)	%	-	91
		Bromofluorobenzene (Surrogate)	%	-	92
	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
LB314564.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	89

DUPLICATES

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 in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266360.008	LB314567.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE266429.003	LB314567.022	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 %
SE266360.008	LB314565.011	% Moisture	%w/w	1	13.7	14.6	37	7
SE266429.003	LB314565.020	% Moisture	%w/w	1	13.4	12.7	38	6

OC Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266360.008	LB314511.014		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	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
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	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
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	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
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.16	30	2
SE266429.003	LB314511.022		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	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
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	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
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	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
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0

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

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

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

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

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

OC Pesticides in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266429.003	LB314511.022		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.17	0.16	30	2

OP Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266360.008	LB314511.014		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	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	-	0.5	0.5	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE266429.003	LB314511.022		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	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	-	0.5	0.5	30	6
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266360.008	LB314511.014		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

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 %
SE266360.008	LB314511.014		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	30	7
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE266429.003	LB314511.022		Naphthalene	mg/kg	0.1	<0.1	0.1	147	28
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	188	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	0.2	107	61
			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	174	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	93	105 ③
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	6
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	6
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3

PCBs in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266360.008	LB314511.014		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	TCMX (Surrogate)	mg/kg	-	0	0	30	2
SE266429.003	LB314511.022		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	TCMX (Surrogate)	mg/kg	-	0	0	30	2

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

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

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.

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

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

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266360.008	LB314566.014		Arsenic, As	mg/kg	1	3	3	68	6
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.5	26	23	32	14
			Copper, Cu	mg/kg	0.5	9.7	8.7	35	11
			Nickel, Ni	mg/kg	0.5	13	11	34	10
			Lead, Pb	mg/kg	1	9	8	42	14
			Zinc, Zn	mg/kg	2	37	35	36	3
SE266429.003	LB314566.022		Arsenic, As	mg/kg	1	4	5	53	14
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.5	45	47	31	5
			Copper, Cu	mg/kg	0.5	12	11	34	7
			Nickel, Ni	mg/kg	0.5	44	43	31	2
			Lead, Pb	mg/kg	1	7	8	43	10
			Zinc, Zn	mg/kg	2	29	29	37	2

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266360.008	LB314511.014		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
SE266429.003	LB314511.022		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 %
SE266360.008	LB314564.014	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	8.5	50	7
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.5	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	9.2	50	9
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE266429.003	LB314564.024	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.1	8.6	50	7
			d8-toluene (Surrogate)	mg/kg	-	8.4	9.1	50	8
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.6	9.6	50	10
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

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

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

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

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

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

Volatile Petroleum Hydrocarbons in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266360.008	LB314564.014		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	-	7.9	8.5	50	7
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.5	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	9.2	50	9
		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
SE266429.003	LB314564.024		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	-	8.1	8.6	50	7
			d8-toluene (Surrogate)	mg/kg	-	8.4	9.1	50	8
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.6	9.6	50	10
		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 %
LB314567.002	Mercury	mg/kg	0.05	0.19	0.2	80 - 120	93

OC Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314511.002	Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	90
	Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	92
	Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	91
	Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	88
	Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	86
	p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	100
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	40 - 130	98

OP Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314511.002	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	88
	Diazinon (Dimpylate)	mg/kg	0.5	1.8	2	60 - 140	89
	Dichlorvos	mg/kg	0.5	1.3	2	60 - 140	65
	Ethion	mg/kg	0.2	1.4	2	60 - 140	70
Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	101
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	105

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314511.002	Naphthalene	mg/kg	0.1	4.3	4	60 - 140	107
	Acenaphthylene	mg/kg	0.1	4.1	4	60 - 140	102
	Acenaphthene	mg/kg	0.1	4.3	4	60 - 140	109
	Phenanthrene	mg/kg	0.1	4.2	4	60 - 140	105
	Anthracene	mg/kg	0.1	4.5	4	60 - 140	113
	Fluoranthene	mg/kg	0.1	4.3	4	60 - 140	108
	Pyrene	mg/kg	0.1	4.5	4	60 - 140	112
	Benzo(a)pyrene	mg/kg	0.1	4.4	4	60 - 140	109
Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	100
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	101
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	105

PCBs in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314511.002	Arochlor 1260	mg/kg	0.2	0.5	0.4	60 - 140	119

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 %
LB314566.002	Arsenic, As	mg/kg	1	340	318.22	80 - 120	108
	Cadmium, Cd	mg/kg	0.3	4.1	4.81	70 - 130	85
	Chromium, Cr	mg/kg	0.5	43	38.31	80 - 120	112
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	106
	Nickel, Ni	mg/kg	0.5	200	187	80 - 120	105
	Lead, Pb	mg/kg	1	97	89.9	80 - 120	108
	Zinc, Zn	mg/kg	2	280	273	80 - 120	104

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314511.002	TRH C10-C14	mg/kg	20	40	40	60 - 140	100
	TRH C15-C28	mg/kg	45	<45	40	60 - 140	92
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	84
TRH F Bands	TRH >C10-C16	mg/kg	25	40	40	60 - 140	99
	TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	87
	TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	88

VOC's in Soil

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

Sample Number	Parameter	Units	LOR

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

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

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314564.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.4	5	60 - 140	89
		Toluene	mg/kg	0.1	4.6	5	60 - 140	92
		Ethylbenzene	mg/kg	0.1	4.5	5	60 - 140	90
		m/p-xylene	mg/kg	0.2	9.1	10	60 - 140	91
		o-xylene	mg/kg	0.1	4.6	5	60 - 140	92
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.8	10	70 - 130	98
		d8-toluene (Surrogate)	mg/kg	-	10.2	10	70 - 130	102
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.3	10	70 - 130	103

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB314564.002		TRH C6-C10	mg/kg	25	72	92.5	60 - 140	78
		TRH C6-C9	mg/kg	20	63	80	60 - 140	78
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.8	10	70 - 130	98
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.3	10	70 - 130	103
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	44	62.5	60 - 140	71

MATRIX SPIKES

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%
SE266361.002	LB314567.004	Mercury	mg/kg	0.05	0.22	<0.05	0.2	102

OC Pesticides in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266361.002	LB314511.004	Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
		Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
		Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	101
		Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	99
		Aldrin	mg/kg	0.1	0.2	<0.1	0.2	97
		Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
		o,p'-DDE*	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	93
		Endrin	mg/kg	0.2	<0.2	<0.2	0.2	91
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
		o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
		o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	105
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
		Mirex	mg/kg	0.1	<0.1	<0.1	-	-
		trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
		Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
		Total OC VIC EPA	mg/kg	1	1	<1	-	-
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.16	-	105

OP Pesticides in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266361.002	LB314511.004	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	<0.2	2	87
		Diazinon (Dimpylate)	mg/kg	0.5	1.8	<0.5	2	88
		Dichlorvos	mg/kg	0.5	1.3	<0.5	2	64
		Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
		Ethion	mg/kg	0.2	1.5	<0.2	2	73
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
		Malathion	mg/kg	0.2	<0.2	<0.2	-	-
		Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
		Total OP Pesticides*	mg/kg	1.7	6.3	<1.7	-	-
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	96
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	101

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266361.002	LB314511.004	Naphthalene	mg/kg	0.1	4.1	<0.1	4	103
		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	4.3	<0.1	4	107
		Fluorene	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.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266361.002	LB314511.004		Phenanthrene	mg/kg	0.1	4.1	<0.1	4	101
			Anthracene	mg/kg	0.1	4.3	<0.1	4	107
			Fluoranthene	mg/kg	0.1	4.4	0.1	4	107
			Pyrene	mg/kg	0.1	4.4	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	4.3	<0.1	4	107
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	4.3	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.4	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.5	<0.3	-	-
			Total PAH (18)	mg/kg	0.8	34	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	95
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	96
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	101

PCBs in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266361.002	LB314511.004		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	120
			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	TCMX (Surrogate)	mg/kg	-	0	0	-	103

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

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266361.002	LB314566.004		Arsenic, As	mg/kg	1	46	5	50	81
			Cadmium, Cd	mg/kg	0.3	42	<0.3	50	84
			Chromium, Cr	mg/kg	0.5	64	22	50	84
			Copper, Cu	mg/kg	0.5	56	10	50	91
			Nickel, Ni	mg/kg	0.5	52	8.1	50	88
			Lead, Pb	mg/kg	1	66	24	50	84
			Zinc, Zn	mg/kg	2	73	33	50	80

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266361.002	LB314511.004		TRH C10-C14	mg/kg	20	48	<20	40	116
			TRH C15-C28	mg/kg	45	47	<45	40	106
			TRH C29-C36	mg/kg	45	<45	<45	40	82
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F Bands	TRH >C10-C16	mg/kg	25	48	<25	40	115
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	48	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	86
			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%
SE266361.002	LB314564.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	3.6	<0.1	5	73
			Toluene	mg/kg	0.1	3.9	<0.1	5	77
			Ethylbenzene	mg/kg	0.1	4.0	<0.1	5	79
			m/p-xylene	mg/kg	0.2	8.2	<0.2	10	82

MATRIX SPIKES

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%
SE266361.002	LB314564.004	Monocyclic	o-xylene	mg/kg	0.1	4.2	<0.1	5	84
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.1	8.6	10	91
			d8-toluene (Surrogate)	mg/kg	-	8.9	8.8	10	89
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.7	9.9	10	97
		Totals	Total BTEX*	mg/kg	0.6	24	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	12	<0.3	-	-

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266361.002	LB314564.004		TRH C6-C10	mg/kg	25	69	<25	92.5	73
			TRH C6-C9	mg/kg	20	61	<20	80	75
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.1	8.6	10	91
			d8-toluene (Surrogate)	mg/kg	-	8.9	8.8	10	89
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.7	9.9	-	97
		VPH F Bands	Benzene (F0)	mg/kg	0.1	3.6	<0.1	-	-
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	45	<25	62.5	70

MATRIX SPIKE DUPLICATES

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.

FOOTNOTES

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.

STATEMENT OF QA/QC PERFORMANCE

SE266429A R0

CLIENT DETAILS

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Project	**E26160 1 Veno St Heathcote -Additional**
Order Number	**E26160**
Samples	3

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SGS Reference	**SE266429A R0**
Date Received	18 Jun 2024
Date Reported	20 Jun 2024

COMMENTS

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

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

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	1 Soil	Type of documentation received	Email
Date documentation received	18/6/2024@1:25pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	15.5°C
Sample container provider	SGS	Turnaround time requested	Two Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

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

Metals in TCLP Extract by ICPOES

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7M_DL2_0.2-0.3	SE266429A.002	LB315499	06 Jun 2024	18 Jun 2024	03 Dec 2024	20 Jun 2024	03 Dec 2024	20 Jun 2024

TCLP (Toxicity Characteristic Leaching Procedure) for Metals

Method: ME-(AU)-[ENV]AN006

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7M_DL2_0.2-0.3	SE266429A.002	LB315420	06 Jun 2024	18 Jun 2024	03 Dec 2024	19 Jun 2024	23 Jun 2024	20 Jun 2024

SURROGATES

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 required for this job.

METHOD BLANKS

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.

Metals in TCLP Extract by ICPOES

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

Sample Number	Parameter	Units	LOR	Result
LB315499.001	Nickel, Ni	mg/L	0.005	<0.005

DUPLICATES

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

No duplicates were required for this job.

LABORATORY CONTROL SAMPLES

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.

Metals in TCLP Extract by ICPOES

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315499.002	Nickel, Ni	mg/L	0.005	0.51	0.5	80 - 120	101

MATRIX SPIKES

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 required for this job.

MATRIX SPIKE DUPLICATES

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.

STATEMENT OF QA/QC PERFORMANCE

SE267083 R0

CLIENT DETAILS

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Order Number	**E26160**
Samples	7

LABORATORY DETAILS

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SGS Reference	**SE267083 R0**
Date Received	20 Jun 2024
Date Reported	25 Jun 2024

COMMENTS

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

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

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

Analysis Date	Nitrite in Water	1 item
Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Water	11 items
	VOCs in Water	1 item

SAMPLE SUMMARY

Type of documentation received	COC	Date documentation received	20/06/2024
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	8.5°C	Sample container provider	SGS
Turnaround time requested	Three Days	Samples received in correct containers	Yes
Sufficient sample for analysis	Yes	Sample cooling method	Ice Bricks
Samples clearly labelled	Yes	Complete documentation received	Yes

HOLDING TIME SUMMARY

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

Alkalinity

Method: ME-(AU)-[ENV]AN135

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10M-2	SE267083.002	LB315710	20 Jun 2024	20 Jun 2024	04 Jul 2024	21 Jun 2024	04 Jul 2024	24 Jun 2024

Ammonia Nitrogen by Discrete Analyser

Method: ME-(AU)-[ENV]AN291

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10M-2	SE267083.002	LB315611	20 Jun 2024	20 Jun 2024	18 Jul 2024	21 Jun 2024	18 Jul 2024	21 Jun 2024

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
BH10M-2	SE267083.002	LB315616	20 Jun 2024	20 Jun 2024	18 Jul 2024	21 Jun 2024	18 Jul 2024	25 Jun 2024

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-2	SE267083.001	LB315737	20 Jun 2024	20 Jun 2024	18 Jul 2024	21 Jun 2024	18 Jul 2024	21 Jun 2024
BH10M-2	SE267083.002	LB315737	20 Jun 2024	20 Jun 2024	18 Jul 2024	21 Jun 2024	18 Jul 2024	21 Jun 2024
BH17M-1	SE267083.003	LB315737	20 Jun 2024	20 Jun 2024	18 Jul 2024	21 Jun 2024	18 Jul 2024	21 Jun 2024

Dissolved Oxygen by Membrane Electrode

Method: ME-(AU)-[ENV]AN176

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-2	SE267083.001	LB315666	20 Jun 2024	20 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024
BH10M-2	SE267083.002	LB315666	20 Jun 2024	20 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024
BH17M-1	SE267083.003	LB315666	20 Jun 2024	20 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024

Filterable Reactive Phosphorus (FRP)

Method: ME-(AU)-[ENV]AN278

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10M-2	SE267083.002	LB315611	20 Jun 2024	20 Jun 2024	18 Jul 2024	21 Jun 2024	18 Jul 2024	21 Jun 2024

Forms of Carbon

Method: ME-(AU)-[ENV]AN190

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10M-2	SE267083.002	LB315788	20 Jun 2024	20 Jun 2024	27 Jun 2024	24 Jun 2024	27 Jun 2024	25 Jun 2024

Mercury (dissolved) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-2	SE267083.001	LB315651	20 Jun 2024	20 Jun 2024	18 Jul 2024	21 Jun 2024	18 Jul 2024	25 Jun 2024
BH10M-2	SE267083.002	LB315651	20 Jun 2024	20 Jun 2024	18 Jul 2024	21 Jun 2024	18 Jul 2024	25 Jun 2024
BH17M-1	SE267083.003	LB315651	20 Jun 2024	20 Jun 2024	18 Jul 2024	21 Jun 2024	18 Jul 2024	25 Jun 2024
QD240620	SE267083.004	LB315651	20 Jun 2024	20 Jun 2024	18 Jul 2024	21 Jun 2024	18 Jul 2024	25 Jun 2024
QR240620	SE267083.005	LB315651	20 Jun 2024	20 Jun 2024	18 Jul 2024	21 Jun 2024	18 Jul 2024	25 Jun 2024

Metals in Water (Dissolved) by ICPOES

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10M-2	SE267083.002	LB315759	20 Jun 2024	20 Jun 2024	17 Dec 2024	24 Jun 2024	17 Dec 2024	24 Jun 2024

Nitrite in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10M-2	SE267083.002	LB315611	20 Jun 2024	20 Jun 2024	24 Jun 2024	21 Jun 2024	24 Jun 2024	25 Jun 2024†

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-2	SE267083.001	LB315600	20 Jun 2024	20 Jun 2024	27 Jun 2024	21 Jun 2024	31 Jul 2024	25 Jun 2024
BH10M-2	SE267083.002	LB315600	20 Jun 2024	20 Jun 2024	27 Jun 2024	21 Jun 2024	31 Jul 2024	25 Jun 2024
BH17M-1	SE267083.003	LB315600	20 Jun 2024	20 Jun 2024	27 Jun 2024	21 Jun 2024	31 Jul 2024	25 Jun 2024
QD240620	SE267083.004	LB315600	20 Jun 2024	20 Jun 2024	27 Jun 2024	21 Jun 2024	31 Jul 2024	25 Jun 2024
QR240620	SE267083.005	LB315600	20 Jun 2024	20 Jun 2024	27 Jun 2024	21 Jun 2024	31 Jul 2024	25 Jun 2024

pH in water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-2	SE267083.001	LB315737	20 Jun 2024	20 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024
BH10M-2	SE267083.002	LB315737	20 Jun 2024	20 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024

HOLDING TIME SUMMARY

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

pH in water (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH17M-1	SE267083.003	LB315737	20 Jun 2024	20 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024

Redox Potential (Eh) in water

Method: ME-(AU)-[ENV]AN240

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-2	SE267083.001	LB315735	20 Jun 2024	20 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024
BH10M-2	SE267083.002	LB315735	20 Jun 2024	20 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024
BH17M-1	SE267083.003	LB315735	20 Jun 2024	20 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024

TKN Kjeldahl Digestion by Discrete Analyser

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10M-2	SE267083.002	LB315605	20 Jun 2024	20 Jun 2024	18 Jul 2024	21 Jun 2024	18 Jul 2024	25 Jun 2024

Total and Volatile Suspended Solids (TSS / VSS)

Method: ME-(AU)-[ENV]AN114

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10M-2	SE267083.002	LB315642	20 Jun 2024	20 Jun 2024	27 Jun 2024	21 Jun 2024	28 Jun 2024	21 Jun 2024

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10M-2	SE267083.002	LB315665	20 Jun 2024	20 Jun 2024	27 Jun 2024	21 Jun 2024	27 Jun 2024	24 Jun 2024

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-2	SE267083.001	LB315920	20 Jun 2024	20 Jun 2024	04 Jul 2024	25 Jun 2024	04 Jul 2024	25 Jun 2024
BH10M-2	SE267083.002	LB315920	20 Jun 2024	20 Jun 2024	04 Jul 2024	25 Jun 2024	04 Jul 2024	25 Jun 2024
BH17M-1	SE267083.003	LB315920	20 Jun 2024	20 Jun 2024	04 Jul 2024	25 Jun 2024	04 Jul 2024	25 Jun 2024

Total Phosphorus by Kjeldahl Digestion DA in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10M-2	SE267083.002	LB315605	20 Jun 2024	20 Jun 2024	18 Jul 2024	21 Jun 2024	18 Jul 2024	24 Jun 2024

Trace Metals (Dissolved) in Water by ICPMS

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-2	SE267083.001	LB315859	20 Jun 2024	20 Jun 2024	17 Dec 2024	24 Jun 2024	17 Dec 2024	25 Jun 2024
BH10M-2	SE267083.002	LB315859	20 Jun 2024	20 Jun 2024	17 Dec 2024	24 Jun 2024	17 Dec 2024	25 Jun 2024
BH17M-1	SE267083.003	LB315859	20 Jun 2024	20 Jun 2024	17 Dec 2024	24 Jun 2024	17 Dec 2024	25 Jun 2024
QD240620	SE267083.004	LB315859	20 Jun 2024	20 Jun 2024	17 Dec 2024	24 Jun 2024	17 Dec 2024	25 Jun 2024
QR240620	SE267083.005	LB315859	20 Jun 2024	20 Jun 2024	17 Dec 2024	24 Jun 2024	17 Dec 2024	25 Jun 2024

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-2	SE267083.001	LB315600	20 Jun 2024	20 Jun 2024	27 Jun 2024	21 Jun 2024	31 Jul 2024	25 Jun 2024
BH10M-2	SE267083.002	LB315600	20 Jun 2024	20 Jun 2024	27 Jun 2024	21 Jun 2024	31 Jul 2024	25 Jun 2024
BH17M-1	SE267083.003	LB315600	20 Jun 2024	20 Jun 2024	27 Jun 2024	21 Jun 2024	31 Jul 2024	25 Jun 2024
QD240620	SE267083.004	LB315600	20 Jun 2024	20 Jun 2024	27 Jun 2024	21 Jun 2024	31 Jul 2024	25 Jun 2024
QR240620	SE267083.005	LB315600	20 Jun 2024	20 Jun 2024	27 Jun 2024	21 Jun 2024	31 Jul 2024	25 Jun 2024

Turbidity

Method: ME-(AU)-[ENV]AN119

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10M-2	SE267083.002	LB315734	20 Jun 2024	20 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024	21 Jun 2024

VOCs in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-2	SE267083.001	LB315814	20 Jun 2024	20 Jun 2024	04 Jul 2024	24 Jun 2024	04 Jul 2024	25 Jun 2024
BH10M-2	SE267083.002	LB315814	20 Jun 2024	20 Jun 2024	04 Jul 2024	24 Jun 2024	04 Jul 2024	25 Jun 2024
BH17M-1	SE267083.003	LB315814	20 Jun 2024	20 Jun 2024	04 Jul 2024	24 Jun 2024	04 Jul 2024	25 Jun 2024
QD240620	SE267083.004	LB315814	20 Jun 2024	20 Jun 2024	04 Jul 2024	24 Jun 2024	04 Jul 2024	25 Jun 2024
QR240620	SE267083.005	LB315814	20 Jun 2024	20 Jun 2024	04 Jul 2024	24 Jun 2024	04 Jul 2024	25 Jun 2024
QTS240620	SE267083.006	LB315814	20 Jun 2024	20 Jun 2024	04 Jul 2024	24 Jun 2024	04 Jul 2024	25 Jun 2024
QTB240620	SE267083.007	LB315814	20 Jun 2024	20 Jun 2024	04 Jul 2024	24 Jun 2024	04 Jul 2024	25 Jun 2024

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

Volatile Petroleum Hydrocarbons in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-2	SE267083.001	LB315814	20 Jun 2024	20 Jun 2024	04 Jul 2024	24 Jun 2024	04 Jul 2024	25 Jun 2024
BH10M-2	SE267083.002	LB315814	20 Jun 2024	20 Jun 2024	04 Jul 2024	24 Jun 2024	04 Jul 2024	25 Jun 2024
BH17M-1	SE267083.003	LB315814	20 Jun 2024	20 Jun 2024	04 Jul 2024	24 Jun 2024	04 Jul 2024	25 Jun 2024
QD240620	SE267083.004	LB315814	20 Jun 2024	20 Jun 2024	04 Jul 2024	24 Jun 2024	04 Jul 2024	25 Jun 2024
QR240620	SE267083.005	LB315814	20 Jun 2024	20 Jun 2024	04 Jul 2024	24 Jun 2024	04 Jul 2024	25 Jun 2024
QTS240620	SE267083.006	LB315814	20 Jun 2024	20 Jun 2024	04 Jul 2024	24 Jun 2024	04 Jul 2024	25 Jun 2024
QTB240620	SE267083.007	LB315814	20 Jun 2024	20 Jun 2024	04 Jul 2024	24 Jun 2024	04 Jul 2024	25 Jun 2024

SURROGATES

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)	BH2M-2	SE267083.001	%	40 - 130%	69
	BH10M-2	SE267083.002	%	40 - 130%	88
	BH17M-1	SE267083.003	%	40 - 130%	81
d14-p-terphenyl (Surrogate)	BH2M-2	SE267083.001	%	40 - 130%	85
	BH10M-2	SE267083.002	%	40 - 130%	101
	BH17M-1	SE267083.003	%	40 - 130%	90
d5-nitrobenzene (Surrogate)	BH2M-2	SE267083.001	%	40 - 130%	83
	BH10M-2	SE267083.002	%	40 - 130%	94
	BH17M-1	SE267083.003	%	40 - 130%	88

VOCs in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH2M-2	SE267083.001	%	40 - 130%	80
	BH10M-2	SE267083.002	%	40 - 130%	78
	BH17M-1	SE267083.003	%	40 - 130%	79
	QD240620	SE267083.004	%	40 - 130%	78
	QR240620	SE267083.005	%	40 - 130%	74
	QTS240620	SE267083.006	%	40 - 130%	104
	QTB240620	SE267083.007	%	40 - 130%	74
d4-1,2-dichloroethane (Surrogate)	BH2M-2	SE267083.001	%	40 - 130%	99
	BH10M-2	SE267083.002	%	40 - 130%	100
	BH17M-1	SE267083.003	%	40 - 130%	98
	QD240620	SE267083.004	%	40 - 130%	103
	QR240620	SE267083.005	%	40 - 130%	97
	QTS240620	SE267083.006	%	40 - 130%	84
	QTB240620	SE267083.007	%	40 - 130%	92
d8-toluene (Surrogate)	BH2M-2	SE267083.001	%	40 - 130%	101
	BH10M-2	SE267083.002	%	40 - 130%	85
	BH17M-1	SE267083.003	%	40 - 130%	94
	QD240620	SE267083.004	%	40 - 130%	82
	QR240620	SE267083.005	%	40 - 130%	91
	QTS240620	SE267083.006	%	40 - 130%	82
	QTB240620	SE267083.007	%	40 - 130%	95

Volatile Petroleum Hydrocarbons in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH2M-2	SE267083.001	%	40 - 130%	80
	BH10M-2	SE267083.002	%	40 - 130%	78
	BH17M-1	SE267083.003	%	40 - 130%	79
	QD240620	SE267083.004	%	40 - 130%	78
	QR240620	SE267083.005	%	40 - 130%	74
d4-1,2-dichloroethane (Surrogate)	BH2M-2	SE267083.001	%	60 - 130%	99
	BH10M-2	SE267083.002	%	60 - 130%	100
	BH17M-1	SE267083.003	%	60 - 130%	98
	QD240620	SE267083.004	%	60 - 130%	103
	QR240620	SE267083.005	%	60 - 130%	97
d8-toluene (Surrogate)	BH2M-2	SE267083.001	%	40 - 130%	101
	BH10M-2	SE267083.002	%	40 - 130%	85
	BH17M-1	SE267083.003	%	40 - 130%	94
	QD240620	SE267083.004	%	40 - 130%	82
	QR240620	SE267083.005	%	40 - 130%	91

METHOD BLANKS

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.

Alkalinity

Method: ME-(AU)-[ENV]AN135

Sample Number	Parameter	Units	LOR	Result
LB315710.001	Bicarbonate Alkalinity as CaCO3	mg/L	5	<5
	Carbonate Alkalinity as CaCO3	mg/L	1	<1
	Total Alkalinity as CaCO3	mg/L	5	<5

Ammonia Nitrogen by Discrete Analyser

Method: ME-(AU)-[ENV]AN291

Sample Number	Parameter	Units	LOR	Result
LB315611.001	Ammonia Nitrogen, NH_3 as N	mg/L	0.01	<0.01

Anions by Ion Chromatography in Water

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

Sample Number	Parameter	Units	LOR	Result
LB315616.001	Chloride	mg/L	1	<1.0
	Nitrate Nitrogen, NO3-N	mg/L	0.005	<0.005
	Sulfate, SO4	mg/L	1	<1.0

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Sample Number	Parameter	Units	LOR	Result
LB315737.001	Conductivity @ 25 C	µS/cm	2	<2
	Total Dissolved Solids (by calculation)	mg/L	10	<10

Dissolved Oxygen by Membrane Electrode

Method: ME-(AU)-[ENV]AN176

Sample Number	Parameter	Units	LOR	Result
LB315666.001	Dissolved Oxygen**	mg/L	0.5	<0.5

Filterable Reactive Phosphorus (FRP)

Method: ME-(AU)-[ENV]AN278

Sample Number	Parameter	Units	LOR	Result
LB315611.001	Filterable Reactive Phosphorus as P	mg/L	0.005	<0.005

Forms of Carbon

Method: ME-(AU)-[ENV]AN190

Sample Number	Parameter	Units	LOR	Result
LB315788.001	Total Organic Carbon as NPOC	mg/L	0.2	<0.2

Mercury (dissolved) in Water

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

Sample Number	Parameter	Units	LOR	Result
LB315651.001	Mercury	mg/L	0.0001	<0.0001

Metals in Water (Dissolved) by ICPOES

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

Sample Number	Parameter	Units	LOR	Result
LB315759.001	Calcium, Ca	mg/L	0.1	<0.1
	Magnesium, Mg	mg/L	0.1	<0.1
	Potassium, K	mg/L	0.1	<0.1
	Sodium, Na	mg/L	0.5	<0.5

Nitrite in Water

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

Sample Number	Parameter	Units	LOR	Result
LB315611.001	Nitrite Nitrogen, NO2 as N	mg/L	0.005	<0.005

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Number	Parameter	Units	LOR	Result
LB315600.001	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

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Water (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB315600.001		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)	%	-	92
		2-fluorobiphenyl (Surrogate)	%	-	90
		d14-p-terphenyl (Surrogate)	%	-	96

Total and Volatile Suspended Solids (TSS / VSS)

Method: ME-(AU)-[ENV]AN114

Sample Number	Parameter	Units	LOR	Result
LB315642.001	Total Suspended Solids Dried at 103-105°C	mg/L	5	<5

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Sample Number	Parameter	Units	LOR	Result
LB315665.001	Total Dissolved Solids Dried at 175-185°C	mg/L	10	<10

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Sample Number	Parameter	Units	LOR	Result
LB315920.001	Total Phenols	mg/L	0.05	<0.05

Total Phosphorus by Kjeldahl Digestion DA in Water

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

Sample Number	Parameter	Units	LOR	Result
LB315605.001	Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	<0.02

Trace Metals (Dissolved) in Water by ICPMS

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

Sample Number	Parameter	Units	LOR	Result
LB315859.001	Aluminium	µg/L	5	<5
	Antimony	µg/L	1	<1
	Arsenic	µg/L	1	<1
	Barium	µg/L	1	<1
	Beryllium	µg/L	1	<1
	Boron	µg/L	5	<5
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Cobalt	µg/L	1	<1
	Copper	µg/L	1	<1
	Iron	µg/L	5	<5
	Lead	µg/L	1	<1
	Manganese	µg/L	1	<1
	Molybdenum	µg/L	1	<1
	Nickel	µg/L	1	<1
	Selenium	µg/L	1	<1
	Silver	µg/L	1	<1
	Strontium	µg/L	1	<1
	Uranium	µg/L	1	<1
	Vanadium	µg/L	1	<1
	Zinc	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.

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number	Parameter	Units	LOR	Result
LB315600.001	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

Turbidity

Method: ME-(AU)-[ENV]AN119

Sample Number	Parameter	Units	LOR	Result
LB315734.001	Turbidity	NTU	0.5	<0.5

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result
LB315814.001	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
		1,1-dichloroethene	µg/L	0.5	<0.5
		Iodomethane	µg/L	5	<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
		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

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
LB315814.001	Monocyclic Aromatic Hydrocarbons	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	0.5	<0.5
		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 (VOC)*	µg/L	0.5	<0.5
	Sulphonated	Carbon disulfide	µg/L	2	<2
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	110
		d8-toluene (Surrogate)	%	-	96
		Bromofluorobenzene (Surrogate)	%	-	81
	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
		Bromoform (THM)	µg/L	0.5	<0.5

Volatile Petroleum Hydrocarbons in Water

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

Sample Number		Parameter	Units	LOR	Result
LB315814.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	110
		d8-toluene (Surrogate)	%	-	96
		Bromofluorobenzene (Surrogate)	%	-	81

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

Alkalinity

Method: ME-(AU)-[ENV]AN135

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267117.001	LB315710.022	Bicarbonate Alkalinity as CaCO3	mg/L	5	2500	2400	15	4
		Carbonate Alkalinity as CaCO3	mg/L	1	<1	<1	200	0
		Total Alkalinity as CaCO3	mg/L	5	2500	2400	15	4

Ammonia Nitrogen by Discrete Analyser

Method: ME-(AU)-[ENV]AN291

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267065.001	LB315611.027	Ammonia Nitrogen, NH_3 as N	mg/L	0.01	0.56	0.56	17	0
SE267103.001	LB315611.024	Ammonia Nitrogen, NH_3 as N	mg/L	0.01	21	21	15	0

Anions by Ion Chromatography in Water

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266877.042	LB315616.014	Nitrate Nitrogen, NO3-N	mg/L	0.005	0.049	0.048	25	1
SE267025.001	LB315616.025	Nitrate Nitrogen, NO3-N	mg/L	0.005	0.17	0.17	18	1

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267158.001	LB315737.014	Conductivity @ 25 C	µS/cm	2	2900	2900	15	0
		Total Dissolved Solids (by calculation)	mg/L	10	1700	1700	15	0
SE267158.004	LB315737.018	Conductivity @ 25 C	µS/cm	2	6200	6200	15	0
		Total Dissolved Solids (by calculation)	mg/L	10	3700	3700	15	0

Filterable Reactive Phosphorus (FRP)

Method: ME-(AU)-[ENV]AN278

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267103.001	LB315611.024	Filterable Reactive Phosphorus as P	mg/L	0.005	0.96	0.97	16	1

Forms of Carbon

Method: ME-(AU)-[ENV]AN190

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267118.006	LB315788.015	Total Organic Carbon as NPOC	mg/L	0.2	6.8	6.7	18	2
SE267158.003	LB315788.025	Total Organic Carbon as NPOC	mg/L	0.2	5.9	6.1	18	4

Mercury (dissolved) in Water

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267085.001	LB315651.022	Mercury	µg/L	0.0001	<0.0001	<0.0001	158	0

Metals in Water (Dissolved) by ICPOES

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267085.001	LB315759.014	Calcium, Ca	mg/L	0.1	18	18	16	0
		Magnesium, Mg	mg/L	0.1	8.8	8.5	16	3
SE267158.004	LB315759.019	Calcium, Ca	mg/L	0.1	84	84	15	0
		Magnesium, Mg	mg/L	0.1	160	160	15	1

Nitrite in Water

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267065.001	LB315611.027	Nitrite Nitrogen, NO2 as N	mg/L	0.005	0.096	0.10	20	4
SE267103.001	LB315611.024	Nitrite Nitrogen, NO2 as N	mg/L	0.005	0.006	0.006	102	9

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267083.003	LB315600.028	Naphthalene	µg/L	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
		Acenaphthylene	µg/L	0.1	<0.1	<0.1	200	0
		Acenaphthene	µg/L	0.1	<0.1	<0.1	200	0
		Fluorene	µg/L	0.1	<0.1	<0.1	200	0

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 (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267083.003	LB315600.028		Phenanthrene	μg/L	0.1	<0.1	<0.1	200	0
			Anthracene	μg/L	0.1	<0.1	<0.1	200	0
			Fluoranthene	μg/L	0.1	<0.1	<0.1	200	0
			Pyrene	μg/L	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	μg/L	0.1	<0.1	<0.1	200	0
			Chrysene	μg/L	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	μg/L	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	μg/L	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	μg/L	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	μg/L	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	μg/L	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	μg/L	0.1	<0.1	<0.1	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	μg/L	-	0.4	0.4	30	2
			2-fluorobiphenyl (Surrogate)	μg/L	-	0.4	0.4	30	3
			d14-p-terphenyl (Surrogate)	μg/L	-	0.4	0.5	30	6
SE267100.004	LB315600.027		Naphthalene	μg/L	0.1	400	290	30	32 ⑤
			2-methylnaphthalene	μg/L	0.1	1200	520	30	78 ⑤
			1-methylnaphthalene	μg/L	0.1	780	340	30	79 ⑤
			Acenaphthylene	μg/L	0.1	3.7	2.8	33	28
			Acenaphthene	μg/L	0.1	11	11	31	0
			Fluorene	μg/L	0.1	37	29	30	23
			Phenanthrene	μg/L	0.1	220	82	30	91 ⑤
			Anthracene	μg/L	0.1	7.7	3.6	32	71 ⑤
			Fluoranthene	μg/L	0.1	3.8	1.1	34	114 ⑤
			Pyrene	μg/L	0.1	10	2.4	32	123 ⑤
			Benzo(a)anthracene	μg/L	0.1	0.3	<0.1	85	94 ⑤
			Chrysene	μg/L	0.1	0.6	0.1	57	131 ⑤
			Benzo(b&j)fluoranthene	μg/L	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	μg/L	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	μg/L	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	μg/L	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	μg/L	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	μg/L	0.1	<0.1	<0.1	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	μg/L	-	0.4	1.1	30	96 ①
			2-fluorobiphenyl (Surrogate)	μg/L	-	0.4	0.6	30	46 †
			d14-p-terphenyl (Surrogate)	μg/L	-	0.6	0.6	30	5

pH in water

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267158.001	LB315737.014	pH**	pH Units	-	7.2	7.2	16	0
SE267158.004	LB315737.018	pH**	pH Units	-	7.4	7.4	16	1

TKN Kjeldahl Digestion by Discrete Analyser

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267023.001	LB315605.021	Total Kjeldahl Nitrogen	mg/L	0.05	3.8	3.6	16	5
SE267049.001	LB315605.022	Total Kjeldahl Nitrogen	mg/L	0.05	84	76	15	10

Total and Volatile Suspended Solids (TSS / VSS)

Method: ME-(AU)-[ENV]AN114

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267086.001	LB315642.010	Total Suspended Solids Dried at 103-105°C	mg/L	5	<5	<5	200	0

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267158.002	LB315920.014	Total Phenols	mg/L	0.05	<0.05	<0.05	200	0
SE267199.001	LB315920.025	Total Phenols	mg/L	0.05	<0.05	<0.05	179	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

Total Phosphorus by Kjeldahl Digestion DA in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267023.001	LB315605.021		Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	3.0	3.0	16	0
SE267049.001	LB315605.022		Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	10	10	15	2

Trace Metals (Dissolved) in Water by ICPMS

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266923.018	LB315859.012		Arsenic	µg/L	1	<1	<1	200	0
			Cadmium	µg/L	0.1	<0.1	<0.1	200	0
			Chromium	µg/L	1	<1	<1	200	0
			Copper	µg/L	1	<1	<1	200	0
			Lead	µg/L	1	<1	<1	200	0
			Nickel	µg/L	1	<1	<1	200	0
			Zinc	µg/L	5	<5	<5	200	0

TRH (Total Recoverable Hydrocarbons) in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267083.003	LB315600.028		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
SE267100.004	LB315600.027		TRH C10-C14	µg/L	50	70000	77000	30	9
			TRH C15-C28	µg/L	200	85000	91000	30	7
			TRH C29-C36	µg/L	200	400	260	91	43
			TRH C37-C40	µg/L	200	<200	<200	188	0
			TRH C10-C40	µg/L	320	CHK	CHK	CHK	CHK
		TRH F Bands	TRH >C10-C16	µg/L	60	95000	100000	30	8
			TRH >C10-C16 - Naphthalene (F2)	µg/L	60	95000	100000	30	8
			TRH >C16-C34 (F3)	µg/L	500	59000	63000	31	6
			TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0

Turbidity

Method: ME-(AU)-[ENV]AN119

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267158.004	LB315734.012		Turbidity	NTU	0.5	300	300	15	1

VOCs in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266998.003	LB315814.027	Monocyclic Aromatic	Benzene	µg/L	0.5	1.5	1.7	61	16
			Toluene	µg/L	0.5	<0.5	<0.5	200	0
			Ethylbenzene	µg/L	0.5	1.9	2.5	53	31
			m/p-xylene	µg/L	1	1	1	104	13
			o-xylene	µg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	7.3	11	36	37 ②
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	7.6	7.6	30	0
			d8-toluene (Surrogate)	µg/L	-	7.8	7.8	30	0
			Bromofluorobenzene (Surrogate)	µg/L	-	10.5	10.4	30	1
		Totals	Total BTEX	µg/L	3	5	6	88	21
SE267083.001	LB315814.024	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
			Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3	<0.3	200	0
			Bromomethane	µg/L	10	<10	<10	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 %
SE267083.001	LB315814.024	Halogenated Aliphatics	Chloroethane	µg/L	5	<5	<5	200	0
			Trichlorofluoromethane	µg/L	1	<1	<1	200	0
			1,1-dichloroethene	µg/L	0.5	<0.5	<0.5	200	0
			Iodomethane	µg/L	5	<5	<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
			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	0.6	0.6	117	4
			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 Compounds	Acrylonitrile	µg/L	0.5	<0.5	<0.5	200	0
			2-nitropropane	µg/L	100	<100	<100	200	0
		Oxygenated Compounds	Acetone (2-propanone)	µg/L	10	<10	<10	200	0
			MtBE (Methyl-tert-butyl ether)	µg/L	0.5	<0.5	<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 (VOC)*	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	-	9.9	8.9	30	10
			d8-toluene (Surrogate)	µg/L	-	10.1	9.4	30	7
			Bromofluorobenzene (Surrogate)	µg/L	-	8.0	10.1	30	24

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 %
SE267083.001	LB315814.024	Totals	Total BTEX	µg/L	3	<3	<3	200	0
			Total VOC	µg/L	10	<10	<10	200	0
		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

Volatile Petroleum Hydrocarbons in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE266998.003	LB315814.027		TRH C6-C10	µg/L	50	500	570	39	12
			TRH C6-C9	µg/L	40	470	540	38	12
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	7.6	7.6	30	0
			d8-toluene (Surrogate)	µg/L	-	7.8	7.8	30	0
			Bromofluorobenzene (Surrogate)	µg/L	-	10.5	10.4	30	1
		VPH F Bands	Benzene (F0)	µg/L	0.5	1.5	1.7	61	16
			TRH C6-C10 minus BTEX (F1)	µg/L	50	500	560	39	12
SE267083.001	LB315814.024		TRH C6-C10	µg/L	50	<50	<50	200	0
			TRH C6-C9	µg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.9	8.9	30	10
			d8-toluene (Surrogate)	µg/L	-	10.1	9.4	30	7
			Bromofluorobenzene (Surrogate)	µg/L	-	8.0	10.1	30	24
		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 SAMPLES

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.

Ammonia Nitrogen by Discrete Analyser

Method: ME-(AU)-[ENV]AN291

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315611.002	Ammonia Nitrogen, NH_3 as N	mg/L	0.01	2.6	2.5	80 - 120	103

Anions by Ion Chromatography in Water

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315616.002	Chloride	mg/L	1	19	20	80 - 120	95
	Nitrate Nitrogen, NO3-N	mg/L	0.005	2.0	2	80 - 120	99
	Sulfate, SO4	mg/L	1	19	20	80 - 120	96

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315737.002	Conductivity @ 25 C	µS/cm	2	300	303	90 - 110	100
	Total Dissolved Solids (by calculation)	mg/L	10	180	181	85 - 115	100

Filterable Reactive Phosphorus (FRP)

Method: ME-(AU)-[ENV]AN278

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315611.002	Filterable Reactive Phosphorus as P	mg/L	0.005	0.099	0.1	80 - 120	99

Forms of Carbon

Method: ME-(AU)-[ENV]AN190

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315788.002	Total Organic Carbon as NPOC	mg/L	0.2	18	20	80 - 120	92

Metals in Water (Dissolved) by ICPOES

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315759.002	Calcium, Ca	mg/L	0.1	51	50.5	80 - 120	102
	Lithium, Li	mg/L	0.005	0.10	0.1	80 - 120	103
	Magnesium, Mg	mg/L	0.1	50	50.5	80 - 120	100
	Potassium, K	mg/L	0.1	55	55	80 - 120	100
	Sodium, Na	mg/L	0.5	52	50.5	80 - 120	103

Nitrite in Water

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315611.002	Nitrite Nitrogen, NO2 as N	mg/L	0.005	0.092	0.1	80 - 120	92

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315600.002	Naphthalene	µg/L	0.1	31	40	60 - 140	77
	Acenaphthylene	µg/L	0.1	32	40	60 - 140	80
	Acenaphthene	µg/L	0.1	33	40	60 - 140	82
	Phenanthrene	µg/L	0.1	37	40	60 - 140	92
	Anthracene	µg/L	0.1	32	40	60 - 140	79
	Fluoranthene	µg/L	0.1	35	40	60 - 140	88
	Pyrene	µg/L	0.1	33	40	60 - 140	83
	Benzo(a)pyrene	µg/L	0.1	35	40	60 - 140	86
Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.4	0.5	40 - 130	80
	2-fluorobiphenyl (Surrogate)	µg/L	-	0.4	0.5	40 - 130	80
	d14-p-terphenyl (Surrogate)	µg/L	-	0.4	0.5	40 - 130	82

pH in water

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315737.003	pH**	No unit	-	7.4	7.415	98 - 102	99

Redox Potential (Eh) in water

Method: ME-(AU)-[ENV]AN240

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.

Redox Potential (Eh) in water (continued)

Method: ME-(AU)-[ENV]AN240

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315735.001	Eh of Sample Relative to Standard H+ Electrode***	mV	-500	439	428	90 - 110	103

Total and Volatile Suspended Solids (TSS / VSS)

Method: ME-(AU)-[ENV]AN114

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315642.002	Total Suspended Solids Dried at 103-105°C	mg/L	5	94	100	80 - 120	94

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315920.002	Total Phenols	mg/L	0.05	0.19	0.2	80 - 120	97

Total Phosphorus by Kjeldahl Digestion DA in Water

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315605.002	Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	0.99	1	80 - 120	99

Trace Metals (Dissolved) in Water by ICPMS

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315859.002	Aluminium	µg/L	5	17	20	80 - 120	87
	Antimony	µg/L	1	21	20	80 - 120	104
	Arsenic	µg/L	1	22	20	80 - 120	108
	Barium	µg/L	1	22	20	80 - 120	108
	Beryllium	µg/L	1	22	20	80 - 120	112
	Boron	µg/L	5	22	20	80 - 120	108
	Cadmium	µg/L	0.1	21	20	80 - 120	103
	Chromium	µg/L	1	21	20	80 - 120	106
	Cobalt	µg/L	1	21	20	80 - 120	103
	Copper	µg/L	1	21	20	80 - 120	103
	Iron	µg/L	5	21	20	80 - 120	107
	Lead	µg/L	1	20	20	80 - 120	101
	Manganese	µg/L	1	23	20	80 - 120	113
	Molybdenum	µg/L	1	22	20	80 - 120	108
	Nickel	µg/L	1	21	20	80 - 120	103
	Selenium	µg/L	1	19	20	80 - 120	96
	Silver	µg/L	1	17	20	80 - 120	86
	Strontium	µg/L	1	21	20	80 - 120	107
	Uranium	µg/L	1	20	20	80 - 120	98
	Vanadium	µg/L	1	22	20	80 - 120	108
	Zinc	µg/L	5	22	20	80 - 120	108

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315600.002		TRH C10-C14	µg/L	50	1100	1200	60 - 140	93
		TRH C15-C28	µg/L	200	1300	1200	60 - 140	106
		TRH C29-C36	µg/L	200	1300	1200	60 - 140	111
	TRH F Bands	TRH >C10-C16	µg/L	60	1200	1200	60 - 140	101
		TRH >C16-C34 (F3)	µg/L	500	1300	1200	60 - 140	109
		TRH >C34-C40 (F4)	µg/L	500	670	600	60 - 140	112

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315814.002	Halogenated Aliphatics	1,1-dichloroethene	µg/L	0.5	46	45.45	60 - 140	101
		1,2-dichloroethane	µg/L	0.5	52	45.45	60 - 140	115
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	55	45.45	60 - 140	121
	Halogenated	Chlorobenzene	µg/L	0.5	64	45.45	60 - 140	140
	Monocyclic Aromatic	Benzene	µg/L	0.5	47	45.45	60 - 140	103
		Toluene	µg/L	0.5	47	45.45	60 - 140	103
		Ethylbenzene	µg/L	0.5	45	45.45	60 - 140	99

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

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

VOCs in Water (continued)

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315814.002	Monocyclic	m/p-xylene	µg/L	1	88	90.9	60 - 140	97
	Aromatic	o-xylene	µg/L	0.5	44	45.45	60 - 140	97
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.1	10	60 - 140	81
		d8-toluene (Surrogate)	µg/L	-	8.4	10	70 - 130	84
		Bromofluorobenzene (Surrogate)	µg/L	-	9.4	10	70 - 130	94
	Trihalomethan	Chloroform (THM)	µg/L	0.5	49	45.45	60 - 140	108

Volatile Petroleum Hydrocarbons in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB315814.002		TRH C6-C10	µg/L	50	1000	946.63	60 - 140	110
		TRH C6-C9	µg/L	40	910	818.71	60 - 140	111
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.1	10	60 - 140	81
		d8-toluene (Surrogate)	µg/L	-	8.4	10	70 - 130	84
		Bromofluorobenzene (Surrogate)	µg/L	-	9.4	10	70 - 130	94
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	770	639.67	60 - 140	120

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.

Ammonia Nitrogen by Discrete Analyser

Method: ME-(AU)-[ENV]AN291

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267033.002	LB315611.026	Ammonia Nitrogen, NH_3 as N	mg/L	0.01	3.5	0.99377	2.5	99

Forms of Carbon

Method: ME-(AU)-[ENV]AN190

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267083.002	LB315788.026	Total Organic Carbon as NPOC	mg/L	0.2	52	4.3	50	95

Mercury (dissolved) in Water

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267070.009	LB315651.004	Mercury	mg/L	0.0001	0.0020	<0.0001	0.008	103

Metals in Water (Dissolved) by ICPOES

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267117.001	LB315759.004	Calcium, Ca	mg/L	0.1	130	84.6268	50.5	95
		Magnesium, Mg	mg/L	0.1	170	121.708	50.5	94
		Potassium, K	mg/L	0.1	200	155.812	55	78

Nitrite in Water

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267030.002	LB315611.026	Nitrite Nitrogen, NO2 as N	mg/L	0.005	0.15	0.045	0.1	105

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267085.001	LB315920.026	Total Phenols	mg/L	0.05	0.19	0.0003	0.2	96

Trace Metals (Dissolved) in Water by ICPMS

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267117.001	LB315859.004	Aluminium	μg/L	5	24	0	20	118
		Arsenic	μg/L	1	41	18.593	20	114
		Cadmium	μg/L	0.1	19	0.099	20	94
		Cobalt	μg/L	1	60	44.049	20	82
		Copper	μg/L	1	19	1.254	20	87
		Lead	μg/L	1	18	0.052	20	92
		Manganese	μg/L	1	350	327.564	20	112
		Zinc	μg/L	5	25	4.009	20	105

VOCs in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266998.001	LB315814.028	Monocyclic Aromatic	Benzene	μg/L	0.5	53	0.03058253387	45.45	115
			Toluene	μg/L	0.5	51	0.00808560813	45.45	112
			Ethylbenzene	μg/L	0.5	49	0.02970438755	45.45	107
			m/p-xylene	μg/L	1	99	0.02872659500	90.9	108
			o-xylene	μg/L	0.5	50	0.02101592751	45.45	109
		Polycyclic	Naphthalene (VOC)*	μg/L	0.5	50	0.14307279277	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	μg/L	-	7.8	10.81457030700	-	78
			d8-toluene (Surrogate)	μg/L	-	8.2	9.77865398393	-	82
			Bromofluorobenzene (Surrogate)	μg/L	-	9.8	8.28222555418	-	98
		Totals	Total BTEX	μg/L	3	300	0	-	-

Volatile Petroleum Hydrocarbons in Water

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

QC Sample	Sample Number	Parameter	Units	LOR

MATRIX SPIKES

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.

Volatile Petroleum Hydrocarbons in Water (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE266998.001	LB315814.028		TRH C6-C10	µg/L	50	970	0	946.63	103
			TRH C6-C9	µg/L	40	890	0	818.71	108
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	7.8	10.81457030700	-	78
			d8-toluene (Surrogate)	µg/L	-	8.2	9.77865398393	-	82
			Bromofluorobenzene (Surrogate)	µg/L	-	9.8	8.28222555418	-	98
		VPH F Bands	Benzene (F0)	µg/L	0.5		0.03058253387	-	-
			TRH C6-C10 minus BTEX (F1)	µg/L	50	670	0	639.67	105

MATRIX SPIKE DUPLICATES

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

Anions by Ion Chromatography in Water

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

QC Sample	Sample Number	Parameter	Units	LOR	Duplicate
SE266926.001	LB315616.026	Nitrate Nitrogen, NO3-N	mg/L	0.005	1.9

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.

STATEMENT OF QA/QC PERFORMANCE

SE255412 R0

CLIENT DETAILS

Contact	Sean Nolan
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	sean.nolan@eiaustralia.com.au
Project	**E26160 1 Veno St, Heathcote**
Order Number	**E26160**
Samples	19

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE255412 R0**
Date Received	19 Oct 2023
Date Reported	26 Oct 2023

COMMENTS

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

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

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

Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	1 item
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item

SAMPLE SUMMARY

Sample counts by matrix	18 Soil, 1 Water	Type of documentation received	COC
Date documentation received	19/10/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	13.5°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

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

Fibre Identification in soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.2-0.3	SE255412.001	LB294537	18 Oct 2023	19 Oct 2023	17 Oct 2024	25 Oct 2023	17 Oct 2024	26 Oct 2023
BH2_0.2-0.3	SE255412.002	LB294537	18 Oct 2023	19 Oct 2023	17 Oct 2024	25 Oct 2023	17 Oct 2024	26 Oct 2023
BH3_0.3-0.4	SE255412.003	LB294537	18 Oct 2023	19 Oct 2023	17 Oct 2024	25 Oct 2023	17 Oct 2024	26 Oct 2023
BH4_0.3-0.4	SE255412.005	LB294537	18 Oct 2023	19 Oct 2023	17 Oct 2024	25 Oct 2023	17 Oct 2024	26 Oct 2023
BH5_0.3-0.4	SE255412.007	LB294537	18 Oct 2023	19 Oct 2023	17 Oct 2024	25 Oct 2023	17 Oct 2024	26 Oct 2023
BH6_0.2-0.3	SE255412.009	LB294537	18 Oct 2023	19 Oct 2023	17 Oct 2024	25 Oct 2023	17 Oct 2024	26 Oct 2023
BH7_0.2-0.3	SE255412.010	LB294537	18 Oct 2023	19 Oct 2023	17 Oct 2024	25 Oct 2023	17 Oct 2024	26 Oct 2023
BH8_0.1-0.2	SE255412.012	LB294537	18 Oct 2023	19 Oct 2023	17 Oct 2024	25 Oct 2023	17 Oct 2024	26 Oct 2023
BH9_0.1-0.2	SE255412.013	LB294537	18 Oct 2023	19 Oct 2023	17 Oct 2024	25 Oct 2023	17 Oct 2024	26 Oct 2023
BH10_0.5-0.6	SE255412.015	LB294537	18 Oct 2023	19 Oct 2023	17 Oct 2024	25 Oct 2023	17 Oct 2024	26 Oct 2023

Mercury (dissolved) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR_20231017	SE255412.017	LB294073	18 Oct 2023	19 Oct 2023	15 Nov 2023	20 Oct 2023	15 Nov 2023	20 Oct 2023

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.2-0.3	SE255412.001	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
BH2_0.2-0.3	SE255412.002	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
BH3_0.3-0.4	SE255412.003	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
BH3_0.7-0.8	SE255412.004	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
BH4_0.3-0.4	SE255412.005	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
BH4_0.6-0.7	SE255412.006	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
BH5_0.3-0.4	SE255412.007	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
BH5_0.8-0.9	SE255412.008	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
BH6_0.2-0.3	SE255412.009	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
BH7_0.2-0.3	SE255412.010	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
BH7_0.5-0.6	SE255412.011	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
BH8_0.1-0.2	SE255412.012	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
BH9_0.1-0.2	SE255412.013	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
BH10_0.2-0.3	SE255412.014	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
BH10_0.5-0.6	SE255412.015	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023
QD_20231017	SE255412.016	LB294437	18 Oct 2023	19 Oct 2023	15 Nov 2023	24 Oct 2023	15 Nov 2023	26 Oct 2023

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.2-0.3	SE255412.001	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
BH2_0.2-0.3	SE255412.002	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
BH3_0.3-0.4	SE255412.003	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
BH3_0.7-0.8	SE255412.004	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
BH4_0.3-0.4	SE255412.005	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
BH4_0.6-0.7	SE255412.006	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
BH5_0.3-0.4	SE255412.007	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
BH5_0.8-0.9	SE255412.008	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
BH6_0.2-0.3	SE255412.009	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
BH7_0.2-0.3	SE255412.010	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
BH7_0.5-0.6	SE255412.011	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
BH8_0.1-0.2	SE255412.012	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
BH9_0.1-0.2	SE255412.013	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
BH10_0.2-0.3	SE255412.014	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
BH10_0.5-0.6	SE255412.015	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
QD_20231017	SE255412.016	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023
QTB1	SE255412.018	LB294413	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	29 Oct 2023	26 Oct 2023

OC Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.2-0.3	SE255412.001	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH2_0.2-0.3	SE255412.002	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH3_0.3-0.4	SE255412.003	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH3_0.7-0.8	SE255412.004	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH4_0.3-0.4	SE255412.005	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023

HOLDING TIME SUMMARY

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

OC Pesticides in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4_0.6-0.7	SE255412.006	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH5_0.3-0.4	SE255412.007	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH5_0.8-0.9	SE255412.008	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH6_0.2-0.3	SE255412.009	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH7_0.2-0.3	SE255412.010	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH7_0.5-0.6	SE255412.011	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH8_0.1-0.2	SE255412.012	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH9_0.1-0.2	SE255412.013	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH10_0.2-0.3	SE255412.014	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH10_0.5-0.6	SE255412.015	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
QD_20231017	SE255412.016	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023

OP Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.2-0.3	SE255412.001	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH2_0.2-0.3	SE255412.002	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH3_0.3-0.4	SE255412.003	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH3_0.7-0.8	SE255412.004	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH4_0.3-0.4	SE255412.005	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH4_0.6-0.7	SE255412.006	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH5_0.3-0.4	SE255412.007	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH5_0.8-0.9	SE255412.008	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH6_0.2-0.3	SE255412.009	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH7_0.2-0.3	SE255412.010	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH7_0.5-0.6	SE255412.011	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH8_0.1-0.2	SE255412.012	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH9_0.1-0.2	SE255412.013	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH10_0.2-0.3	SE255412.014	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH10_0.5-0.6	SE255412.015	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
QD_20231017	SE255412.016	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023

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
BH1_0.2-0.3	SE255412.001	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH2_0.2-0.3	SE255412.002	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH3_0.3-0.4	SE255412.003	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH3_0.7-0.8	SE255412.004	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH4_0.3-0.4	SE255412.005	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH4_0.6-0.7	SE255412.006	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH5_0.3-0.4	SE255412.007	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH5_0.8-0.9	SE255412.008	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH6_0.2-0.3	SE255412.009	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH7_0.2-0.3	SE255412.010	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH7_0.5-0.6	SE255412.011	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH8_0.1-0.2	SE255412.012	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH9_0.1-0.2	SE255412.013	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH10_0.2-0.3	SE255412.014	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH10_0.5-0.6	SE255412.015	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
QD_20231017	SE255412.016	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023

PCBs in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.2-0.3	SE255412.001	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH2_0.2-0.3	SE255412.002	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH3_0.3-0.4	SE255412.003	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH3_0.7-0.8	SE255412.004	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH4_0.3-0.4	SE255412.005	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH4_0.6-0.7	SE255412.006	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH5_0.3-0.4	SE255412.007	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH5_0.8-0.9	SE255412.008	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH6_0.2-0.3	SE255412.009	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023

HOLDING TIME SUMMARY

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

PCBs in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7_0.2-0.3	SE255412.010	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH7_0.5-0.6	SE255412.011	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH8_0.1-0.2	SE255412.012	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH9_0.1-0.2	SE255412.013	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH10_0.2-0.3	SE255412.014	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH10_0.5-0.6	SE255412.015	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
QD_20231017	SE255412.016	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.2-0.3	SE255412.001	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
BH2_0.2-0.3	SE255412.002	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
BH3_0.3-0.4	SE255412.003	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
BH3_0.7-0.8	SE255412.004	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
BH4_0.3-0.4	SE255412.005	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
BH4_0.6-0.7	SE255412.006	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
BH5_0.3-0.4	SE255412.007	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
BH5_0.8-0.9	SE255412.008	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
BH6_0.2-0.3	SE255412.009	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
BH7_0.2-0.3	SE255412.010	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
BH7_0.5-0.6	SE255412.011	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
BH8_0.1-0.2	SE255412.012	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
BH9_0.1-0.2	SE255412.013	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
BH10_0.2-0.3	SE255412.014	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
BH10_0.5-0.6	SE255412.015	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023
QD_20231017	SE255412.016	LB294426	18 Oct 2023	19 Oct 2023	15 Apr 2024	24 Oct 2023	15 Apr 2024	26 Oct 2023

Trace Metals (Dissolved) in Water by ICPMS

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR_20231017	SE255412.017	LB294209	18 Oct 2023	19 Oct 2023	15 Apr 2024	23 Oct 2023	15 Apr 2024	23 Oct 2023

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_0.2-0.3	SE255412.001	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH2_0.2-0.3	SE255412.002	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH3_0.3-0.4	SE255412.003	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH3_0.7-0.8	SE255412.004	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH4_0.3-0.4	SE255412.005	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH4_0.6-0.7	SE255412.006	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH5_0.3-0.4	SE255412.007	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH5_0.8-0.9	SE255412.008	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH6_0.2-0.3	SE255412.009	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH7_0.2-0.3	SE255412.010	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH7_0.5-0.6	SE255412.011	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH8_0.1-0.2	SE255412.012	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH9_0.1-0.2	SE255412.013	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH10_0.2-0.3	SE255412.014	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
BH10_0.5-0.6	SE255412.015	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023
QD_20231017	SE255412.016	LB294377	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	03 Dec 2023	26 Oct 2023

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR_20231017	SE255412.017	LB294104	18 Oct 2023	19 Oct 2023	25 Oct 2023	20 Oct 2023	29 Nov 2023	26 Oct 2023

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.2-0.3	SE255412.001	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH2_0.2-0.3	SE255412.002	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH3_0.3-0.4	SE255412.003	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH3_0.7-0.8	SE255412.004	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023

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

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

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

VOC's in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4_0.3-0.4	SE255412.005	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH4_0.6-0.7	SE255412.006	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH5_0.3-0.4	SE255412.007	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH5_0.8-0.9	SE255412.008	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH6_0.2-0.3	SE255412.009	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH7_0.2-0.3	SE255412.010	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH7_0.5-0.6	SE255412.011	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH8_0.1-0.2	SE255412.012	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH9_0.1-0.2	SE255412.013	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH10_0.2-0.3	SE255412.014	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH10_0.5-0.6	SE255412.015	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
QD_20231017	SE255412.016	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
QTB1	SE255412.018	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
QTS1	SE255412.019	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023

VOCs in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR_20231017	SE255412.017	LB294253	18 Oct 2023	19 Oct 2023	01 Nov 2023	23 Oct 2023	01 Nov 2023	24 Oct 2023

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_0.2-0.3	SE255412.001	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH2_0.2-0.3	SE255412.002	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH3_0.3-0.4	SE255412.003	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH3_0.7-0.8	SE255412.004	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH4_0.3-0.4	SE255412.005	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH4_0.6-0.7	SE255412.006	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH5_0.3-0.4	SE255412.007	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH5_0.8-0.9	SE255412.008	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH6_0.2-0.3	SE255412.009	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH7_0.2-0.3	SE255412.010	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH7_0.5-0.6	SE255412.011	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH8_0.1-0.2	SE255412.012	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH9_0.1-0.2	SE255412.013	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH10_0.2-0.3	SE255412.014	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
BH10_0.5-0.6	SE255412.015	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
QD_20231017	SE255412.016	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
QTB1	SE255412.018	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023
QTS1	SE255412.019	LB294407	18 Oct 2023	19 Oct 2023	01 Nov 2023	24 Oct 2023	01 Nov 2023	26 Oct 2023

Volatile Petroleum Hydrocarbons in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR_20231017	SE255412.017	LB294253	18 Oct 2023	19 Oct 2023	01 Nov 2023	23 Oct 2023	01 Nov 2023	24 Oct 2023

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

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason 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)	BH1_0.2-0.3	SE255412.001	%	60 - 130%	71
	BH2_0.2-0.3	SE255412.002	%	60 - 130%	71
	BH3_0.3-0.4	SE255412.003	%	60 - 130%	71
	BH4_0.3-0.4	SE255412.005	%	60 - 130%	71
	BH5_0.3-0.4	SE255412.007	%	60 - 130%	72
	BH6_0.2-0.3	SE255412.009	%	60 - 130%	71
	BH7_0.2-0.3	SE255412.010	%	60 - 130%	72
	BH8_0.1-0.2	SE255412.012	%	60 - 130%	73
	BH9_0.1-0.2	SE255412.013	%	60 - 130%	71
	BH10_0.5-0.6	SE255412.015	%	60 - 130%	71

OP Pesticides in Soil Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1_0.2-0.3	SE255412.001	%	60 - 130%	92
	BH2_0.2-0.3	SE255412.002	%	60 - 130%	102
	BH3_0.3-0.4	SE255412.003	%	60 - 130%	98
	BH4_0.3-0.4	SE255412.005	%	60 - 130%	99
	BH5_0.3-0.4	SE255412.007	%	60 - 130%	99
	BH6_0.2-0.3	SE255412.009	%	60 - 130%	101
	BH7_0.2-0.3	SE255412.010	%	60 - 130%	97
	BH8_0.1-0.2	SE255412.012	%	60 - 130%	101
	BH9_0.1-0.2	SE255412.013	%	60 - 130%	97
	BH10_0.5-0.6	SE255412.015	%	60 - 130%	91
d14-p-terphenyl (Surrogate)	BH1_0.2-0.3	SE255412.001	%	60 - 130%	98
	BH2_0.2-0.3	SE255412.002	%	60 - 130%	107
	BH3_0.3-0.4	SE255412.003	%	60 - 130%	106
	BH4_0.3-0.4	SE255412.005	%	60 - 130%	106
	BH5_0.3-0.4	SE255412.007	%	60 - 130%	105
	BH6_0.2-0.3	SE255412.009	%	60 - 130%	108
	BH7_0.2-0.3	SE255412.010	%	60 - 130%	106
	BH8_0.1-0.2	SE255412.012	%	60 - 130%	110
	BH9_0.1-0.2	SE255412.013	%	60 - 130%	104
	BH10_0.5-0.6	SE255412.015	%	60 - 130%	93

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1_0.2-0.3	SE255412.001	%	70 - 130%	92
	BH2_0.2-0.3	SE255412.002	%	70 - 130%	102
	BH3_0.3-0.4	SE255412.003	%	70 - 130%	98
	BH3_0.7-0.8	SE255412.004	%	70 - 130%	99
	BH4_0.3-0.4	SE255412.005	%	70 - 130%	99
	BH4_0.6-0.7	SE255412.006	%	70 - 130%	101
	BH5_0.3-0.4	SE255412.007	%	70 - 130%	99
	BH5_0.8-0.9	SE255412.008	%	70 - 130%	101
	BH6_0.2-0.3	SE255412.009	%	70 - 130%	101
	BH7_0.2-0.3	SE255412.010	%	70 - 130%	97
	BH7_0.5-0.6	SE255412.011	%	70 - 130%	103
	BH8_0.1-0.2	SE255412.012	%	70 - 130%	101
	BH9_0.1-0.2	SE255412.013	%	70 - 130%	97
	BH10_0.2-0.3	SE255412.014	%	70 - 130%	113
	BH10_0.5-0.6	SE255412.015	%	70 - 130%	91
d14-p-terphenyl (Surrogate)	BH1_0.2-0.3	SE255412.001	%	70 - 130%	98
	BH2_0.2-0.3	SE255412.002	%	70 - 130%	107
	BH3_0.3-0.4	SE255412.003	%	70 - 130%	106
	BH3_0.7-0.8	SE255412.004	%	70 - 130%	101
	BH4_0.3-0.4	SE255412.005	%	70 - 130%	106
	BH4_0.6-0.7	SE255412.006	%	70 - 130%	107
	BH5_0.3-0.4	SE255412.007	%	70 - 130%	105
	BH5_0.8-0.9	SE255412.008	%	70 - 130%	107
	BH6_0.2-0.3	SE255412.009	%	70 - 130%	108
	BH7_0.2-0.3	SE255412.010	%	70 - 130%	106
	BH7_0.5-0.6	SE255412.011	%	70 - 130%	110

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)	BH8_0.1-0.2	SE255412.012	%	70 - 130%	110
	BH9_0.1-0.2	SE255412.013	%	70 - 130%	104
	BH10_0.2-0.3	SE255412.014	%	70 - 130%	120
	BH10_0.5-0.6	SE255412.015	%	70 - 130%	93
d5-nitrobenzene (Surrogate)	BH1_0.2-0.3	SE255412.001	%	70 - 130%	97
	BH2_0.2-0.3	SE255412.002	%	70 - 130%	104
	BH3_0.3-0.4	SE255412.003	%	70 - 130%	104
	BH3_0.7-0.8	SE255412.004	%	70 - 130%	102
	BH4_0.3-0.4	SE255412.005	%	70 - 130%	106
	BH4_0.6-0.7	SE255412.006	%	70 - 130%	103
	BH5_0.3-0.4	SE255412.007	%	70 - 130%	107
	BH5_0.8-0.9	SE255412.008	%	70 - 130%	104
	BH6_0.2-0.3	SE255412.009	%	70 - 130%	107
	BH7_0.2-0.3	SE255412.010	%	70 - 130%	104
	BH7_0.5-0.6	SE255412.011	%	70 - 130%	105
	BH8_0.1-0.2	SE255412.012	%	70 - 130%	102
	BH9_0.1-0.2	SE255412.013	%	70 - 130%	102
	BH10_0.2-0.3	SE255412.014	%	70 - 130%	116
	BH10_0.5-0.6	SE255412.015	%	70 - 130%	88

PCBs in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	BH1_0.2-0.3	SE255412.001	%	60 - 130%	72
	BH2_0.2-0.3	SE255412.002	%	60 - 130%	74
	BH3_0.3-0.4	SE255412.003	%	60 - 130%	77
	BH4_0.3-0.4	SE255412.005	%	60 - 130%	76
	BH5_0.3-0.4	SE255412.007	%	60 - 130%	77
	BH6_0.2-0.3	SE255412.009	%	60 - 130%	76
	BH7_0.2-0.3	SE255412.010	%	60 - 130%	75
	BH8_0.1-0.2	SE255412.012	%	60 - 130%	78
	BH9_0.1-0.2	SE255412.013	%	60 - 130%	77
	BH10_0.5-0.6	SE255412.015	%	60 - 130%	77

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1_0.2-0.3	SE255412.001	%	60 - 130%	100
	BH2_0.2-0.3	SE255412.002	%	60 - 130%	94
	BH3_0.3-0.4	SE255412.003	%	60 - 130%	101
	BH3_0.7-0.8	SE255412.004	%	60 - 130%	90
	BH4_0.3-0.4	SE255412.005	%	60 - 130%	98
	BH4_0.6-0.7	SE255412.006	%	60 - 130%	92
	BH5_0.3-0.4	SE255412.007	%	60 - 130%	85
	BH5_0.8-0.9	SE255412.008	%	60 - 130%	94
	BH6_0.2-0.3	SE255412.009	%	60 - 130%	96
	BH7_0.2-0.3	SE255412.010	%	60 - 130%	96
	BH7_0.5-0.6	SE255412.011	%	60 - 130%	90
	BH8_0.1-0.2	SE255412.012	%	60 - 130%	93
	BH9_0.1-0.2	SE255412.013	%	60 - 130%	98
	BH10_0.2-0.3	SE255412.014	%	60 - 130%	87
	BH10_0.5-0.6	SE255412.015	%	60 - 130%	100
	QD_20231017	SE255412.016	%	60 - 130%	97
	QTB1	SE255412.018	%	60 - 130%	82
	QTS1	SE255412.019	%	60 - 130%	104
d4-1,2-dichloroethane (Surrogate)	BH1_0.2-0.3	SE255412.001	%	60 - 130%	110
	BH2_0.2-0.3	SE255412.002	%	60 - 130%	105
	BH3_0.3-0.4	SE255412.003	%	60 - 130%	116
	BH3_0.7-0.8	SE255412.004	%	60 - 130%	109
	BH4_0.3-0.4	SE255412.005	%	60 - 130%	119
	BH4_0.6-0.7	SE255412.006	%	60 - 130%	109
	BH5_0.3-0.4	SE255412.007	%	60 - 130%	102
	BH5_0.8-0.9	SE255412.008	%	60 - 130%	114
	BH6_0.2-0.3	SE255412.009	%	60 - 130%	120

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)	BH7_0.2-0.3	SE255412.010	%	60 - 130%	112
	BH7_0.5-0.6	SE255412.011	%	60 - 130%	113
	BH8_0.1-0.2	SE255412.012	%	60 - 130%	120
	BH9_0.1-0.2	SE255412.013	%	60 - 130%	119
	BH10_0.2-0.3	SE255412.014	%	60 - 130%	105
	BH10_0.5-0.6	SE255412.015	%	60 - 130%	115
	QD_20231017	SE255412.016	%	60 - 130%	122
	QTB1	SE255412.018	%	60 - 130%	105
	QTS1	SE255412.019	%	60 - 130%	112
d8-toluene (Surrogate)	BH1_0.2-0.3	SE255412.001	%	60 - 130%	91
	BH2_0.2-0.3	SE255412.002	%	60 - 130%	90
	BH3_0.3-0.4	SE255412.003	%	60 - 130%	94
	BH3_0.7-0.8	SE255412.004	%	60 - 130%	92
	BH4_0.3-0.4	SE255412.005	%	60 - 130%	99
	BH4_0.6-0.7	SE255412.006	%	60 - 130%	93
	BH5_0.3-0.4	SE255412.007	%	60 - 130%	87
	BH5_0.8-0.9	SE255412.008	%	60 - 130%	98
	BH6_0.2-0.3	SE255412.009	%	60 - 130%	99
	BH7_0.2-0.3	SE255412.010	%	60 - 130%	92
	BH7_0.5-0.6	SE255412.011	%	60 - 130%	91
	BH8_0.1-0.2	SE255412.012	%	60 - 130%	94
	BH9_0.1-0.2	SE255412.013	%	60 - 130%	97
	BH10_0.2-0.3	SE255412.014	%	60 - 130%	85
	BH10_0.5-0.6	SE255412.015	%	60 - 130%	92
	QD_20231017	SE255412.016	%	60 - 130%	98
	QTB1	SE255412.018	%	60 - 130%	87
	QTS1	SE255412.019	%	60 - 130%	97

VOCs in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QR_20231017	SE255412.017	%	40 - 130%	99
d4-1,2-dichloroethane (Surrogate)	QR_20231017	SE255412.017	%	40 - 130%	92
d8-toluene (Surrogate)	QR_20231017	SE255412.017	%	40 - 130%	86

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1_0.2-0.3	SE255412.001	%	60 - 130%	100
	BH2_0.2-0.3	SE255412.002	%	60 - 130%	94
	BH3_0.3-0.4	SE255412.003	%	60 - 130%	101
	BH3_0.7-0.8	SE255412.004	%	60 - 130%	90
	BH4_0.3-0.4	SE255412.005	%	60 - 130%	98
	BH4_0.6-0.7	SE255412.006	%	60 - 130%	92
	BH5_0.3-0.4	SE255412.007	%	60 - 130%	85
	BH5_0.8-0.9	SE255412.008	%	60 - 130%	94
	BH6_0.2-0.3	SE255412.009	%	60 - 130%	96
	BH7_0.2-0.3	SE255412.010	%	60 - 130%	96
	BH7_0.5-0.6	SE255412.011	%	60 - 130%	90
	BH8_0.1-0.2	SE255412.012	%	60 - 130%	93
	BH9_0.1-0.2	SE255412.013	%	60 - 130%	98
	BH10_0.2-0.3	SE255412.014	%	60 - 130%	87
	BH10_0.5-0.6	SE255412.015	%	60 - 130%	100
	QD_20231017	SE255412.016	%	60 - 130%	97
d4-1,2-dichloroethane (Surrogate)	BH1_0.2-0.3	SE255412.001	%	60 - 130%	110
	BH2_0.2-0.3	SE255412.002	%	60 - 130%	105
	BH3_0.3-0.4	SE255412.003	%	60 - 130%	116
	BH3_0.7-0.8	SE255412.004	%	60 - 130%	109
	BH4_0.3-0.4	SE255412.005	%	60 - 130%	119
	BH4_0.6-0.7	SE255412.006	%	60 - 130%	109
	BH5_0.3-0.4	SE255412.007	%	60 - 130%	102
	BH5_0.8-0.9	SE255412.008	%	60 - 130%	114
	BH6_0.2-0.3	SE255412.009	%	60 - 130%	120
	BH7_0.2-0.3	SE255412.010	%	60 - 130%	112

SURROGATES

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)	BH7_0.5-0.6	SE255412.011	%	60 - 130%	113
	BH8_0.1-0.2	SE255412.012	%	60 - 130%	120
	BH9_0.1-0.2	SE255412.013	%	60 - 130%	119
	BH10_0.2-0.3	SE255412.014	%	60 - 130%	105
	BH10_0.5-0.6	SE255412.015	%	60 - 130%	115
	QD_20231017	SE255412.016	%	60 - 130%	122
d8-toluene (Surrogate)	BH1_0.2-0.3	SE255412.001	%	60 - 130%	91
	BH2_0.2-0.3	SE255412.002	%	60 - 130%	90
	BH3_0.3-0.4	SE255412.003	%	60 - 130%	94
	BH3_0.7-0.8	SE255412.004	%	60 - 130%	92
	BH4_0.3-0.4	SE255412.005	%	60 - 130%	99
	BH4_0.6-0.7	SE255412.006	%	60 - 130%	93
	BH5_0.3-0.4	SE255412.007	%	60 - 130%	87
	BH5_0.8-0.9	SE255412.008	%	60 - 130%	98
	BH6_0.2-0.3	SE255412.009	%	60 - 130%	99
	BH7_0.2-0.3	SE255412.010	%	60 - 130%	92
	BH7_0.5-0.6	SE255412.011	%	60 - 130%	91
	BH8_0.1-0.2	SE255412.012	%	60 - 130%	94
	BH9_0.1-0.2	SE255412.013	%	60 - 130%	97
	BH10_0.2-0.3	SE255412.014	%	60 - 130%	85
	BH10_0.5-0.6	SE255412.015	%	60 - 130%	92
	QD_20231017	SE255412.016	%	60 - 130%	98

Volatile Petroleum Hydrocarbons in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QR_20231017	SE255412.017	%	40 - 130%	99
d4-1,2-dichloroethane (Surrogate)	QR_20231017	SE255412.017	%	60 - 130%	92
d8-toluene (Surrogate)	QR_20231017	SE255412.017	%	40 - 130%	86

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
LB294073.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB294437.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB294377.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	72

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB294377.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	91
		d14-p-terphenyl (Surrogate)	%	-	96

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB294377.001	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

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
LB294377.001		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)	%	-	91
		d14-p-terphenyl (Surrogate)	%	-	96

PCBs in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB294377.001		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	TCMX (Surrogate)	%	-	72

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

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

Sample Number	Parameter	Units	LOR	Result
LB294426.001	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
LB294209.001	Arsenic	μg/L	1	<1
	Cadmium	μg/L	0.1	<0.1
	Chromium	μg/L	1	<1
	Copper	μg/L	1	<1
	Lead	μg/L	1	<1
	Nickel	μg/L	1	<1
	Zinc	μg/L	5	<5
LB294209.025	Arsenic	μg/L	1	<1
	Cadmium	μg/L	0.1	<0.1
	Chromium	μg/L	1	<1
	Copper	μg/L	1	<1
	Lead	μg/L	1	<1
	Nickel	μg/L	1	<1
	Zinc	μg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB294377.001	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

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

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

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result
LB294104.001		TRH C10-C14	µg/L	50	<50
		TRH C15-C28	µg/L	200	<200
		TRH C29-C36	µg/L	200	<200
		TRH C37-C40	µg/L	200	<200

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB294407.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	122
		d8-toluene (Surrogate)	%	-	105
		Bromofluorobenzene (Surrogate)	%	-	108
	Totals	Total BTEX*	mg/kg	0.6	<0.6

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result
LB294253.001	Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	0.5	<0.5
		Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1
		o-xylene	µg/L	0.5	<0.5
	Polycyclic VOCs	Naphthalene (VOC)*	µg/L	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	90
		d8-toluene (Surrogate)	%	-	83
		Bromofluorobenzene (Surrogate)	%	-	98

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB294407.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	122

Volatile Petroleum Hydrocarbons in Water

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

Sample Number		Parameter	Units	LOR	Result
LB294253.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	90
		d8-toluene (Surrogate)	%	-	83
		Bromofluorobenzene (Surrogate)	%	-	98

DUPLICATES

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 %
SE255395.001	LB294073.014	Mercury	µg/L	0.0001	<0.0001	<0.0001	200	26
SE255431.014	LB294073.023	Mercury	µg/L	0.0001	<0.0001	<0.0001	200	40

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255412.010	LB294437.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE255599.003	LB294437.023	Mercury	mg/kg	0.05	0.1080521196	0.1157409	75	7

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255412.010	LB294413.011	% Moisture	%w/w	1	13.3	12.3	38	8
SE255599.003	LB294413.021	% Moisture	%w/w	1	14.463276836	13.616652211	37	6

OC Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255599.001	LB294377.025		Alpha BHC	mg/kg	0.1	0	0	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	0.0009532032	0.0009929228	200	0
			Beta BHC	mg/kg	0.1	0.0028733630	0.0031720177	200	0
			Lindane (gamma BHC)	mg/kg	0.1	0.0012758924	0.0006940632	200	0
			Delta BHC	mg/kg	0.1	0.0020227194	0.0009541845	200	0
			Heptachlor	mg/kg	0.1	0.0120215011	0.0138450684	200	0
			Aldrin	mg/kg	0.1	0.0138052664	0.0146423347	200	0
			Isodrin	mg/kg	0.1	0.0002525484	0.0002697494	200	0
			Heptachlor epoxide	mg/kg	0.1	0.0013380000	0.0003497317	200	0
			Gamma Chlordane	mg/kg	0.1	0.0161915119	0.0178110006	200	0
			Alpha Chlordane	mg/kg	0.1	0.0082218442	0.0091135823	200	0
			Alpha Endosulfan	mg/kg	0.2	0.0004041949	0.0003222025	200	0
			o,p'-DDE*	mg/kg	0.1	0.0004041949	0.0003222025	200	0
			p,p'-DDE	mg/kg	0.1	0.0011921659	0.0010151320	200	0
			Dieldrin	mg/kg	0.2	0.0300650054	0.0313353908	200	0
			Endrin	mg/kg	0.2	0.0008988854	0.0016170652	200	0
			Beta Endosulfan	mg/kg	0.2	0.0004534219	0.0001752738	200	0
			o,p'-DDD*	mg/kg	0.1	0.0157517636	0.0199116032	200	0
			p,p'-DDD	mg/kg	0.1	0.0003613540	0.0002436680	200	0
			Endrin aldehyde	mg/kg	0.1	0.0005075691	0.0027827991	200	0
			Endosulfan sulphate	mg/kg	0.1	0.0008730746	0.0019906074	200	0
			o,p'-DDT*	mg/kg	0.1	0.0003590620	0.0002421224	200	0
			p,p'-DDT	mg/kg	0.1	0.0005903951	0.0004200261	200	0
			Endrin ketone	mg/kg	0.1	0.0031416949	0.0014253224	200	0
			Methoxychlor	mg/kg	0.1	0.0007309441	0.0034135822	200	0
			Mirex	mg/kg	0.1	0.0060056006	0.0021553427	200	0
			trans-Nonachlor	mg/kg	0.1	0.0059614871	0.0064586953	200	0
			Total CLP OC Pesticides	mg/kg	1	0	0	200	0
			Total OC VIC EPA	mg/kg	1	0	0	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.1057367647	0.1071840956	30	1

OP Pesticides in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255412.010	LB294377.014	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
		Ethion	mg/kg	0.2	<0.2	<0.2	200	0
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
		Malathion	mg/kg	0.2	<0.2	<0.2	200	0
		Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
		Parathion-ethyl (Parathion)	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.

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

OP Pesticides in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255412.010	LB294377.014		Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3
SE255599.001	LB294377.025		Azinphos-methyl (Guthion)	mg/kg	0.2	0.0094526170	0.0011675627	200	0
			Bromophos Ethyl	mg/kg	0.2	0.0019299901	0.0003788815	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	0.0084545327	0.0058916950	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	0	0	200	0
			Dichlorvos	mg/kg	0.5	0	0	200	0
			Dimethoate	mg/kg	0.5	0.0012914822	0.0086071879	200	0
			Ethion	mg/kg	0.2	0	0	200	0
			Fenitrothion	mg/kg	0.2	0.0012200729	0	200	0
			Malathion	mg/kg	0.2	0.0003763901	0.0004860219	200	0
			Methidathion	mg/kg	0.5	0.0002092023	0.0017328736	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	0.0107101715	0.0109826937	200	0
			Total OP Pesticides*	mg/kg	1.7	0	0	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5124956423	0.4980452994	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5362020553	0.5200324111	30	3

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255412.010	LB294377.014		Naphthalene	mg/kg	0.1	<0.1	<0.1	188	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	177	0
			1-methylnaphthalene	mg/kg	0.1	0.1	<0.1	134	5
			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	131	9
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	123	73
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	0
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3
SE255599.001	LB294377.025		Naphthalene	mg/kg	0.1	0.0067671371	0.0053260365	200	0
			2-methylnaphthalene	mg/kg	0.1	0.0055011309	0.0039196584	200	0
			1-methylnaphthalene	mg/kg	0.1	0.0051099749	0.0045724298	200	0
			Acenaphthylene	mg/kg	0.1	0.0258873552	0.0146660413	200	0
			Acenaphthene	mg/kg	0.1	0.0019034385	0.0019971168	200	0
			Fluorene	mg/kg	0.1	0.0088496910	0.0069137623	200	0
			Phenanthrene	mg/kg	0.1	0.1205923347	0.0784900676	130	19
			Anthracene	mg/kg	0.1	0.0594107906	0.0358303984	200	0
			Fluoranthene	mg/kg	0.1	0.2751847209	0.1759164541	74	44
			Pyrene	mg/kg	0.1	0.2519702492	0.1667919135	78	41
			Benzo(a)anthracene	mg/kg	0.1	0.1507205270	0.0920843363	112	40
			Chrysene	mg/kg	0.1	0.1655907322	0.0999681838	105	49
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.1531855288	0.1016319143	108	40
			Benzo(k)fluoranthene	mg/kg	0.1	0.0775793238	0.0545552216	181	0
			Benzo(a)pyrene	mg/kg	0.1	0.1525485922	0.1004937361	109	41
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.0914784656	0.0667420379	156	0

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

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

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

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255599.001	LB294377.025		Dibenzo(ah)anthracene	mg/kg	0.1	0.0201548968	0.0133651470	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.0868743685	0.0641409584	162	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	0.19235303750	0.1004937361	147	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	0.24785303750	0.1714937361	105	21
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	0.30335303750	0.2424937361	120	1
			Total PAH (18)	mg/kg	0.8	1.3473720092	0.4432021039	41	101 ②
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5310697483	0.5258408345	30	1
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5124956423	0.4980452994	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5362020553	0.5200324111	30	3

PCBs in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255599.001	LB294377.025		Arochlor 1016	mg/kg	0.2	0	0	200	0
			Arochlor 1221	mg/kg	0.2	0	0	200	0
			Arochlor 1232	mg/kg	0.2	0	0	200	0
			Arochlor 1242	mg/kg	0.2	0	0	200	0
			Arochlor 1248	mg/kg	0.2	0	0	200	0
			Arochlor 1254	mg/kg	0.2	0	0	200	0
			Arochlor 1260	mg/kg	0.2	0	0	200	0
			Arochlor 1262	mg/kg	0.2	0	0	200	0
			Arochlor 1268	mg/kg	0.2	0	0	200	0
			Total PCBs (Arochlors)	mg/kg	1	0	0	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0.1097328793	0.1150279751	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 %
SE255412.010	LB294426.014		Arsenic, As	mg/kg	1	4	5	52	12
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.5	47	42	31	10
			Copper, Cu	mg/kg	0.5	11	9.7	35	12
			Nickel, Ni	mg/kg	0.5	40	38	31	7
			Lead, Pb	mg/kg	1	25	13	35	60 ②
			Zinc, Zn	mg/kg	2	32	28	37	15
SE255599.003	LB294426.023		Arsenic, As	mg/kg	1	3.4468945578	3.5231115983	59	2
			Cadmium, Cd	mg/kg	0.3	0.1269706780	0.0924738934	200	0
			Chromium, Cr	mg/kg	0.5	11.6367428589	9.8046284016	35	17
			Copper, Cu	mg/kg	0.5	26.8545379734	24.427002909	32	9
			Nickel, Ni	mg/kg	0.5	24.7966547198	22.404555737	32	10
			Lead, Pb	mg/kg	1	36.8728208845	57.190072131	32	16
			Zinc, Zn	mg/kg	2	01.634038590	08.898790163	32	7

Trace Metals (Dissolved) in Water by ICPMS

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255427.001	LB294209.014		Lead	µg/L	1	<1	<1	200	0

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255412.010	LB294377.014		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
SE255599.001	LB294377.025		TRH C10-C14	mg/kg	20	1.4509607351	0	200	0
			TRH C15-C28	mg/kg	45	17.882873851	0	200	0
			TRH C29-C36	mg/kg	45	7.3959899749	0	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

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255599.001	LB294377.025		TRH C37-C40	mg/kg	100	1.5769423558	0	200	0
			TRH C10-C36 Total	mg/kg	110	0	0	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	0	0	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	1.6095238095	0	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	23.5563909774	0	200	0
			TRH >C34-C40 (F4)	mg/kg	120	3.1386800334	0	200	0

TRH (Total Recoverable Hydrocarbons) in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255367.002	LB294104.028		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
SE255419.001	LB294104.029		TRH C10-C14	µg/L	50	184.725	170.075	58	8
			TRH C15-C28	µg/L	200	1044.55	950.125	50	9
			TRH C29-C36	µg/L	200	2.675	7	200	0
			TRH C37-C40	µg/L	200	1.375	0	200	0
			TRH C10-C40	µg/L	320	1233.325	1127.2	57	9
		TRH F Bands	TRH >C10-C16	µg/L	60	305.2	279.85	51	9
			TRH >C10-C16 - Naphthalene (F2)	µg/L	60	05.156860296	279.85	51	9
			TRH >C16-C34 (F3)	µg/L	500	924.825	843.875	87	9
			TRH >C34-C40 (F4)	µg/L	500	1.375	1.325	200	0

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255412.010	LB294407.014	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.2	9.4	50	18
			d8-toluene (Surrogate)	mg/kg	-	9.2	8.0	50	14
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.6	7.8	50	20
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE255599.003	LB294407.025	Monocyclic Aromatic	Benzene	mg/kg	0.1	0.0028959887	0	200	0
			Toluene	mg/kg	0.1	0.0058693959	0.0055144900	200	0
			Ethylbenzene	mg/kg	0.1	0.0030735553	0.0024161121	200	0
			m/p-xylene	mg/kg	0.2	0.0101737707	0.0101390342	200	0
			o-xylene	mg/kg	0.1	0.0061595724	0.0069167963	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	0.0065997067	0.0016055283	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.9231821977	12.3345342432	50	3
			d8-toluene (Surrogate)	mg/kg	-	9.7191735642	10.096177434	50	4
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.2838773356	9.8397440713	50	6
		Totals	Total BTEX*	mg/kg	0.6	0	0	200	0
			Total Xylenes*	mg/kg	0.3	0.0163333432	0.0170558306	200	0

VOCs in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255412.017	LB294253.027	Monocyclic Aromatic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
			Toluene	µg/L	0.5	0.6	0.7	111	16
			Ethylbenzene	µg/L	0.5	<0.5	<0.5	200	0
			m/p-xylene	µg/L	1	<1	<1	200	0
			o-xylene	µg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	200	0

DUPLICATES

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 %
SE255412.017	LB294253.027	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.2	10	30	9
			d8-toluene (Surrogate)	µg/L	-	8.6	10	30	18
			Bromofluorobenzene (Surrogate)	µg/L	-	9.9	9.0	30	9
		Totals	Total BTEX	µg/L	3	<3	<3	200	0
SE255525.005	LB294253.028	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
			o-xylene	µg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.2	11	30	16
			d8-toluene (Surrogate)	µg/L	-	9.1	11	30	18
			Bromofluorobenzene (Surrogate)	µg/L	-	10	9.1	30	13
		Totals	Total BTEX	µg/L	3	<3	<3	200	0

Volatile Petroleum Hydrocarbons in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255412.010	LB294407.014		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	-	11.2	9.4	50	18
			d8-toluene (Surrogate)	mg/kg	-	9.2	8.0	50	14
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.6	7.8	50	20
		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
SE255599.003	LB294407.025		TRH C6-C10	mg/kg	25	0	0	200	0
			TRH C6-C9	mg/kg	20	0	0	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.9231821977	12.3345342432	50	3
			d8-toluene (Surrogate)	mg/kg	-	9.7191735642	10.0961774345	50	4
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.2838773356	9.8397440713	50	6
		VPH F Bands	Benzene (F0)	mg/kg	0.1	0.0028959887	0	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	0	0	200	0

Volatile Petroleum Hydrocarbons in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255412.017	LB294253.027		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	-	9.2	10	30	9
			d8-toluene (Surrogate)	µg/L	-	8.6	10	30	18
			Bromofluorobenzene (Surrogate)	µg/L	-	9.9	9.0	30	9
		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
SE255525.005	LB294253.028		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	-	9.2	11	30	16
			d8-toluene (Surrogate)	µg/L	-	9.1	11	30	18
			Bromofluorobenzene (Surrogate)	µg/L	-	10	9.1	30	13
		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.

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB294437.002	Mercury	mg/kg	0.05	0.21	0.2	80 - 120	103

OC Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB294377.002	Delta BHC	mg/kg	0.1	0.1	0.2	60 - 140	66
	Heptachlor	mg/kg	0.1	0.1	0.2	60 - 140	71
	Aldrin	mg/kg	0.1	0.1	0.2	60 - 140	67
	Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	69
	Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	66
	p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	87
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.11	0.15	40 - 130	72

OP Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB294377.002	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	91
	Diazinon (Dimpylate)	mg/kg	0.5	1.8	2	60 - 140	92
	Dichlorvos	mg/kg	0.5	1.4	2	60 - 140	71
	Ethion	mg/kg	0.2	1.8	2	60 - 140	89
Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	95
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	101

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB294377.002	Naphthalene	mg/kg	0.1	3.5	4	60 - 140	88
	Acenaphthylene	mg/kg	0.1	3.5	4	60 - 140	87
	Acenaphthene	mg/kg	0.1	3.8	4	60 - 140	94
	Phenanthrene	mg/kg	0.1	3.8	4	60 - 140	95
	Anthracene	mg/kg	0.1	3.8	4	60 - 140	96
	Fluoranthene	mg/kg	0.1	3.7	4	60 - 140	92
	Pyrene	mg/kg	0.1	3.8	4	60 - 140	94
	Benzo(a)pyrene	mg/kg	0.1	3.5	4	60 - 140	88
Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	95
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	95
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	101

PCBs in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB294377.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	103

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 %
LB294426.002	Arsenic, As	mg/kg	1	340	318.22	80 - 120	108
	Cadmium, Cd	mg/kg	0.3	4.3	4.81	70 - 130	89
	Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	108
	Copper, Cu	mg/kg	0.5	330	290	80 - 120	113
	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	105

Trace Metals (Dissolved) in Water by ICPMS

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB294209.002	Arsenic	µg/L	1	21	20	80 - 120	103
	Cadmium	µg/L	0.1	20	20	80 - 120	101
	Chromium	µg/L	1	20	20	80 - 120	98
	Copper	µg/L	1	19	20	80 - 120	96
	Lead	µg/L	1	21	20	80 - 120	103
	Nickel	µg/L	1	20	20	80 - 120	102
	Zinc	µg/L	5	19	20	80 - 120	95
LB294209.026	Arsenic	µg/L	1	23	20	80 - 120	115
	Cadmium	µg/L	0.1	21	20	80 - 120	105

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 (continued)

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB294209.026		Chromium	µg/L	1	20	20	80 - 120	100
		Copper	µg/L	1	19	20	80 - 120	97
		Lead	µg/L	1	20	20	80 - 120	102
		Nickel	µg/L	1	20	20	80 - 120	99
		Zinc	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 %
LB294377.002		TRH C10-C14	mg/kg	20	40	40	60 - 140	100
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	95
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	101
	TRH F Bands	TRH >C10-C16	mg/kg	25	40	40	60 - 140	99
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	96
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	108

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB294104.002		TRH C10-C14	µg/L	50	1000	1200	60 - 140	84
		TRH C15-C28	µg/L	200	1200	1200	60 - 140	104
		TRH C29-C36	µg/L	200	1200	1200	60 - 140	101
	TRH F Bands	TRH >C10-C16	µg/L	60	1100	1200	60 - 140	92
		TRH >C16-C34 (F3)	µg/L	500	1300	1200	60 - 140	106
		TRH >C34-C40 (F4)	µg/L	500	660	600	60 - 140	110

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB294407.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	5.1	5	60 - 140	102
		Toluene	mg/kg	0.1	5.2	5	60 - 140	104
		Ethylbenzene	mg/kg	0.1	5.1	5	60 - 140	101
		m/p-xylene	mg/kg	0.2	10	10	60 - 140	101
		o-xylene	mg/kg	0.1	5.2	5	60 - 140	103
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.0	10	70 - 130	110
		d8-toluene (Surrogate)	mg/kg	-	10.7	10	70 - 130	107
		Bromofluorobenzene (Surrogate)	mg/kg	-	11.2	10	70 - 130	112

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB294253.002	Monocyclic Aromatic	Benzene	µg/L	0.5	54	45.45	60 - 140	119
		Toluene	µg/L	0.5	53	45.45	60 - 140	116
		Ethylbenzene	µg/L	0.5	51	45.45	60 - 140	113
		m/p-xylene	µg/L	1	100	90.9	60 - 140	112
		o-xylene	µg/L	0.5	51	45.45	60 - 140	111
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.1	10	60 - 140	101
		d8-toluene (Surrogate)	µg/L	-	9.9	10	70 - 130	99
		Bromofluorobenzene (Surrogate)	µg/L	-	9.2	10	70 - 130	92

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB294407.002		TRH C6-C10	mg/kg	25	81	92.5	60 - 140	88
		TRH C6-C9	mg/kg	20	70	80	60 - 140	88
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.0	10	70 - 130	110
		Bromofluorobenzene (Surrogate)	mg/kg	-	11.2	10	70 - 130	112
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	51	62.5	60 - 140	81

Volatile Petroleum Hydrocarbons in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB294253.002		TRH C6-C10	µg/L	50	830	946.63	60 - 140	88
		TRH C6-C9	µg/L	40	710	818.71	60 - 140	87
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.1	10	60 - 140	101
		d8-toluene (Surrogate)	µg/L	-	9.9	10	70 - 130	99
		Bromofluorobenzene (Surrogate)	µg/L	-	9.2	10	70 - 130	92
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	520	639.67	60 - 140	81

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%
SE255412.001	LB294437.004		Mercury	mg/kg	0.05	0.19	<0.05	0.2	89

OC Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE255412.001	LB294377.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.1	<0.1	0.2	73
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	78
			Aldrin	mg/kg	0.1	0.1	<0.1	0.2	73
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	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	75
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	71
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	90
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	<1	<1	-	-
			Total OC VIC EPA	mg/kg	1	<1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.11	0.11	-	71

OP Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE255412.001	LB294377.004		Azinphos-methyl (Guthion)	mg/kg	0.2	2.0	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.9	<0.2	2	95
			Diazinon (Dimpylate)	mg/kg	0.5	1.9	<0.5	2	96
			Dichlorvos	mg/kg	0.5	1.4	<0.5	2	72
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	1.9	<0.2	2	95
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	9.1	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	98
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	102

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE255412.001	LB294377.004		Naphthalene	mg/kg	0.1	3.7	<0.1	4	91
			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	3.5	<0.1	4	88
			Acenaphthene	mg/kg	0.1	3.8	<0.1	4	95
			Fluorene	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.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE255412.001	LB294377.004		Phenanthrene	mg/kg	0.1	4.0	<0.1	4	98
			Anthracene	mg/kg	0.1	4.0	<0.1	4	99
			Fluoranthene	mg/kg	0.1	3.8	<0.1	4	94
			Pyrene	mg/kg	0.1	3.7	<0.1	4	93
			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/2*	TEQ (mg/kg)	0.2	3.8	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	3.8	<0.3	-	-
			Total PAH (18)	mg/kg	0.8	30	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	99
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	98
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	102

PCBs in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE255412.001	LB294377.004		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	0.4	<0.2	0.4	108
			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	TCMX (Surrogate)	mg/kg	-	0	0	-	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%
SE255412.001	LB294426.004		Arsenic, As	mg/kg	1	51	6	50	92
			Cadmium, Cd	mg/kg	0.3	46	<0.3	50	93
			Chromium, Cr	mg/kg	0.5	86	37	50	100
			Copper, Cu	mg/kg	0.5	63	8.8	50	108
			Nickel, Ni	mg/kg	0.5	84	30	50	109
			Lead, Pb	mg/kg	1	52	9	50	87
			Zinc, Zn	mg/kg	2	79	26	50	105

Trace Metals (Dissolved) in Water by ICPMS

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE255269A.017	LB294209.004		Arsenic	μg/L	1	21	-0.005	20	104
			Cadmium	μg/L	0.1	20	0.009	20	101
			Chromium	μg/L	1	20	0.064	20	99
			Copper	μg/L	1	20	0.104	20	99
			Lead	μg/L	1	21	0.004	20	107
			Nickel	μg/L	1	20	0.049	20	102
			Zinc	μg/L	5	21	3.04	20	88

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE255412.001	LB294377.004		TRH C10-C14	mg/kg	20	46	<20	40	105
			TRH C15-C28	mg/kg	45	45	<45	40	105
			TRH C29-C36	mg/kg	45	50	<45	40	101
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	140	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	TRH >C10-C16	mg/kg	25	46	<25	40	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.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE255412.001	LB294377.004	TRH F Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	46	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	100
			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%
SE255412.001	LB294407.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.4	<0.1	5	88
			Toluene	mg/kg	0.1	4.8	<0.1	5	96
			Ethylbenzene	mg/kg	0.1	4.7	<0.1	5	94
			m/p-xylene	mg/kg	0.2	9.6	<0.2	10	96
			o-xylene	mg/kg	0.1	4.9	<0.1	5	97
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.1	11.0	10	91
			d8-toluene (Surrogate)	mg/kg	-	8.8	9.1	10	88
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.7	10.0	10	97
		Totals	Total BTEX*	mg/kg	0.6	28	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	15	<0.3	-	-

VOCs in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE255418.031	LB294253.026	Monocyclic Aromatic	Benzene	µg/L	0.5	51	0	45.45	113
			Toluene	µg/L	0.5	50	0.22887587533	45.45	109
			Ethylbenzene	µg/L	0.5	48	0.01189440008	45.45	105
			m/p-xylene	µg/L	1	97	0.01843686479	90.9	107
			o-xylene	µg/L	0.5	48	0.00859336004	45.45	107
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	46	0.07923229888	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.9	9.31249414851	-	89
			d8-toluene (Surrogate)	µg/L	-	9.7	8.44531088856	-	97
			Bromofluorobenzene (Surrogate)	µg/L	-	10.8	9.91045784869	-	108
		Totals	Total BTEX	µg/L	3	290	0	-	-

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE255412.001	LB294407.004		TRH C6-C10	mg/kg	25	73	<25	92.5	78
			TRH C6-C9	mg/kg	20	63	<20	80	78
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.1	11.0	10	91
			d8-toluene (Surrogate)	mg/kg	-	8.8	9.1	10	88
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.7	10.0	-	97
		VPH F Bands	Benzene (F0)	mg/kg	0.1	4.4	<0.1	-	-
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	44	<25	62.5	70

Volatile Petroleum Hydrocarbons in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Original	Spike	Recovery%
SE255418.031	LB294253.026		TRH C6-C10	µg/L	50	0	946.63	87
			TRH C6-C9	µg/L	40	0	818.71	87
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.31249414851	-	89
			d8-toluene (Surrogate)	µg/L	-	8.44531088856	-	97
			Bromofluorobenzene (Surrogate)	µg/L	-	9.91045784869	-	108
		VPH F Bands	Benzene (F0)	µg/L	0.5	0	-	-
			TRH C6-C10 minus BTEX (F1)	µg/L	50	0	639.67	83

MATRIX SPIKE DUPLICATES

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.

FOOTNOTES

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.

STATEMENT OF QA/QC PERFORMANCE

CLIENT DETAILS

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Order Number	**E26160**
Samples	19

LABORATORY DETAILS

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SGS Reference	**SE255412A R0**
Date Received	01 Nov 2023
Date Reported	06 Nov 2023

COMMENTS

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

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

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

Extraction Date	Moisture Content	3 items
	pH in soil (1:5)	3 items

SAMPLE SUMMARY

Sample counts by matrix	3 Soil	Type of documentation received	Email
Date documentation received	1/11/2023@11:06an	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	13.5°C
Sample container provider	SGS	Turnaround time requested	Three Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

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

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
BH2_0.2-0.3	SE255412A.002	LB295608	18 Oct 2023	01 Nov 2023	15 Nov 2023	06 Nov 2023	15 Nov 2023	06 Nov 2023
BH5_0.3-0.4	SE255412A.007	LB295608	18 Oct 2023	01 Nov 2023	15 Nov 2023	06 Nov 2023	15 Nov 2023	06 Nov 2023
BH9_0.1-0.2	SE255412A.013	LB295608	18 Oct 2023	01 Nov 2023	15 Nov 2023	06 Nov 2023	15 Nov 2023	06 Nov 2023

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2_0.2-0.3	SE255412A.002	LB295383	18 Oct 2023	01 Nov 2023	01 Nov 2023	02 Nov 2023†	07 Nov 2023	06 Nov 2023
BH5_0.3-0.4	SE255412A.007	LB295383	18 Oct 2023	01 Nov 2023	01 Nov 2023	02 Nov 2023†	07 Nov 2023	06 Nov 2023
BH9_0.1-0.2	SE255412A.013	LB295383	18 Oct 2023	01 Nov 2023	01 Nov 2023	02 Nov 2023†	07 Nov 2023	06 Nov 2023

pH in soil (1:5)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2_0.2-0.3	SE255412A.002	LB295505	18 Oct 2023	01 Nov 2023	25 Oct 2023	03 Nov 2023†	04 Nov 2023	03 Nov 2023
BH5_0.3-0.4	SE255412A.007	LB295505	18 Oct 2023	01 Nov 2023	25 Oct 2023	03 Nov 2023†	04 Nov 2023	03 Nov 2023
BH9_0.1-0.2	SE255412A.013	LB295505	18 Oct 2023	01 Nov 2023	25 Oct 2023	03 Nov 2023†	04 Nov 2023	03 Nov 2023

SURROGATES

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 required for this job.

METHOD BLANKS

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
LB295608.001	Exchangeable Sodium, Na	mg/kg	2	-0.3812
	Exchangeable Potassium, K	mg/kg	2	0.5551
	Exchangeable Calcium, Ca	mg/kg	2	0.1289
	Exchangeable Magnesium, Mg	mg/kg	2	-0.0567

DUPLICATES

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

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255890.001	LB295383.011	% Moisture	%w/w	1	4.5454545454	4.6280991735	52	2
SE255890.006	LB295383.017	% Moisture	%w/w	1	13.367942894	5.7188498402	37	16

pH in soil (1:5)

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255890.001	LB295505.014	pH	pH Units	0.1	5.426	5.359	32	1
SE255890.006	LB295505.020	pH	pH Units	0.1	5.974	5.994	32	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.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB295608.002	Exchangeable Sodium, Na	meq/100g	0.01	0.20	0.194	80 - 120	102
	Exchangeable Potassium, K	meq/100g	0.01	0.61	0.63	80 - 120	97
	Exchangeable Calcium, Ca	meq/100g	0.01	6.7	6.3	80 - 120	107
	Exchangeable Magnesium, Mg	meq/100g	0.02	1.0	1.11	80 - 120	93

pH in soil (1:5)

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB295505.003	pH	pH Units	0.1	7.4	7.415	98 - 102	100

MATRIX SPIKES

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 required for this job.

MATRIX SPIKE DUPLICATES

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.

FOOTNOTES

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.

STATEMENT OF QA/QC PERFORMANCE

SE255779 R1

CLIENT DETAILS

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Order Number	**E26160**
Samples	7

LABORATORY DETAILS

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SGS Reference	**SE255779 R1**
Date Received	27 Oct 2023
Date Reported	03 Nov 2023

COMMENTS

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

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

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	7 Water	Type of documentation received	COC
Date documentation received	27/10/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	15.6°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

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

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

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
BH2M-1	SE255779.001	LB294905	26 Oct 2023	27 Oct 2023	23 Nov 2023	30 Oct 2023	23 Nov 2023	31 Oct 2023
BH7M-1	SE255779.002	LB294905	26 Oct 2023	27 Oct 2023	23 Nov 2023	30 Oct 2023	23 Nov 2023	31 Oct 2023
BH10M-1	SE255779.003	LB294905	26 Oct 2023	27 Oct 2023	23 Nov 2023	30 Oct 2023	23 Nov 2023	31 Oct 2023
GWQD_20231026	SE255779.004	LB294905	26 Oct 2023	27 Oct 2023	23 Nov 2023	30 Oct 2023	23 Nov 2023	31 Oct 2023
GWQR_20231026	SE255779.005	LB294905	26 Oct 2023	27 Oct 2023	23 Nov 2023	30 Oct 2023	23 Nov 2023	31 Oct 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-1	SE255779.001	LB295019	26 Oct 2023	27 Oct 2023	02 Nov 2023	31 Oct 2023	10 Dec 2023	02 Nov 2023
BH7M-1	SE255779.002	LB295019	26 Oct 2023	27 Oct 2023	02 Nov 2023	31 Oct 2023	10 Dec 2023	02 Nov 2023
BH10M-1	SE255779.003	LB295019	26 Oct 2023	27 Oct 2023	02 Nov 2023	31 Oct 2023	10 Dec 2023	02 Nov 2023
GWQD_20231026	SE255779.004	LB295019	26 Oct 2023	27 Oct 2023	02 Nov 2023	31 Oct 2023	10 Dec 2023	02 Nov 2023
GWQR_20231026	SE255779.005	LB295019	26 Oct 2023	27 Oct 2023	02 Nov 2023	31 Oct 2023	10 Dec 2023	02 Nov 2023

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-1	SE255779.001	LB295023	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	31 Oct 2023
BH7M-1	SE255779.002	LB295023	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	31 Oct 2023
BH10M-1	SE255779.003	LB295023	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	31 Oct 2023

Trace Metals (Dissolved) in Water by ICPMS

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-1	SE255779.001	LB294903	26 Oct 2023	27 Oct 2023	23 Apr 2024	30 Oct 2023	23 Apr 2024	30 Oct 2023
BH7M-1	SE255779.002	LB294903	26 Oct 2023	27 Oct 2023	23 Apr 2024	30 Oct 2023	23 Apr 2024	30 Oct 2023
BH10M-1	SE255779.003	LB294903	26 Oct 2023	27 Oct 2023	23 Apr 2024	30 Oct 2023	23 Apr 2024	30 Oct 2023
GWQD_20231026	SE255779.004	LB294903	26 Oct 2023	27 Oct 2023	23 Apr 2024	30 Oct 2023	23 Apr 2024	30 Oct 2023
GWQR_20231026	SE255779.005	LB294903	26 Oct 2023	27 Oct 2023	23 Apr 2024	30 Oct 2023	23 Apr 2024	30 Oct 2023

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-1	SE255779.001	LB295019	26 Oct 2023	27 Oct 2023	02 Nov 2023	31 Oct 2023	10 Dec 2023	02 Nov 2023
BH7M-1	SE255779.002	LB295019	26 Oct 2023	27 Oct 2023	02 Nov 2023	31 Oct 2023	10 Dec 2023	02 Nov 2023
BH10M-1	SE255779.003	LB295019	26 Oct 2023	27 Oct 2023	02 Nov 2023	31 Oct 2023	10 Dec 2023	02 Nov 2023
GWQD_20231026	SE255779.004	LB295019	26 Oct 2023	27 Oct 2023	02 Nov 2023	31 Oct 2023	10 Dec 2023	02 Nov 2023
GWQR_20231026	SE255779.005	LB295019	26 Oct 2023	27 Oct 2023	02 Nov 2023	31 Oct 2023	10 Dec 2023	02 Nov 2023

VOCs in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-1	SE255779.001	LB295069	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	01 Nov 2023
BH7M-1	SE255779.002	LB295069	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	01 Nov 2023
BH10M-1	SE255779.003	LB295069	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	01 Nov 2023
GWQD_20231026	SE255779.004	LB295069	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	01 Nov 2023
GWQR_20231026	SE255779.005	LB295069	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	01 Nov 2023
QTB1	SE255779.006	LB295069	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	01 Nov 2023
QTS1	SE255779.007	LB295069	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	01 Nov 2023

Volatile Petroleum Hydrocarbons in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2M-1	SE255779.001	LB295069	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	01 Nov 2023
BH7M-1	SE255779.002	LB295069	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	01 Nov 2023
BH10M-1	SE255779.003	LB295069	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	01 Nov 2023
GWQD_20231026	SE255779.004	LB295069	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	01 Nov 2023
GWQR_20231026	SE255779.005	LB295069	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	01 Nov 2023
QTB1	SE255779.006	LB295069	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	01 Nov 2023
QTS1	SE255779.007	LB295069	26 Oct 2023	27 Oct 2023	09 Nov 2023	31 Oct 2023	09 Nov 2023	01 Nov 2023

SURROGATES

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)	BH2M-1	SE255779.001	%	40 - 130%	58
	BH7M-1	SE255779.002	%	40 - 130%	74
	BH10M-1	SE255779.003	%	40 - 130%	67
d14-p-terphenyl (Surrogate)	BH2M-1	SE255779.001	%	40 - 130%	57
	BH7M-1	SE255779.002	%	40 - 130%	80
	BH10M-1	SE255779.003	%	40 - 130%	75
d5-nitrobenzene (Surrogate)	BH2M-1	SE255779.001	%	40 - 130%	58
	BH7M-1	SE255779.002	%	40 - 130%	73
	BH10M-1	SE255779.003	%	40 - 130%	66

VOCs in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH2M-1	SE255779.001	%	40 - 130%	99
	BH7M-1	SE255779.002	%	40 - 130%	103
	BH10M-1	SE255779.003	%	40 - 130%	102
	GWQD_20231026	SE255779.004	%	40 - 130%	101
	GWQR_20231026	SE255779.005	%	40 - 130%	90
	QTB1	SE255779.006	%	40 - 130%	89
	QTS1	SE255779.007	%	40 - 130%	105
d4-1,2-dichloroethane (Surrogate)	BH2M-1	SE255779.001	%	40 - 130%	97
	BH7M-1	SE255779.002	%	40 - 130%	96
	BH10M-1	SE255779.003	%	40 - 130%	98
	GWQD_20231026	SE255779.004	%	40 - 130%	107
	GWQR_20231026	SE255779.005	%	40 - 130%	103
	QTB1	SE255779.006	%	40 - 130%	103
	QTS1	SE255779.007	%	40 - 130%	96
d8-toluene (Surrogate)	BH2M-1	SE255779.001	%	40 - 130%	92
	BH7M-1	SE255779.002	%	40 - 130%	99
	BH10M-1	SE255779.003	%	40 - 130%	97
	GWQD_20231026	SE255779.004	%	40 - 130%	104
	GWQR_20231026	SE255779.005	%	40 - 130%	103
	QTB1	SE255779.006	%	40 - 130%	105
	QTS1	SE255779.007	%	40 - 130%	101

Volatile Petroleum Hydrocarbons in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH2M-1	SE255779.001	%	40 - 130%	99
	BH7M-1	SE255779.002	%	40 - 130%	103
	BH10M-1	SE255779.003	%	40 - 130%	102
	GWQD_20231026	SE255779.004	%	40 - 130%	101
	GWQR_20231026	SE255779.005	%	40 - 130%	90
d4-1,2-dichloroethane (Surrogate)	BH2M-1	SE255779.001	%	60 - 130%	97
	BH7M-1	SE255779.002	%	60 - 130%	96
	BH10M-1	SE255779.003	%	60 - 130%	98
	GWQD_20231026	SE255779.004	%	60 - 130%	107
	GWQR_20231026	SE255779.005	%	60 - 130%	103
d8-toluene (Surrogate)	BH2M-1	SE255779.001	%	40 - 130%	92
	BH7M-1	SE255779.002	%	40 - 130%	99
	BH10M-1	SE255779.003	%	40 - 130%	97
	GWQD_20231026	SE255779.004	%	40 - 130%	104
	GWQR_20231026	SE255779.005	%	40 - 130%	103

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
LB294905.001		Mercury	mg/L	0.0001	<0.0001

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result
LB295019.001		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)	%	-	44
		2-fluorobiphenyl (Surrogate)	%	-	48
		d14-p-terphenyl (Surrogate)	%	-	52

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Sample Number		Parameter	Units	LOR	Result
LB295023.001		Total Phenols	mg/L	0.05	<0.05

Trace Metals (Dissolved) in Water by ICPMS

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

Sample Number		Parameter	Units	LOR	Result
LB294903.001		Arsenic	µg/L	1	<1
		Cadmium	µg/L	0.1	<0.1
		Chromium	µg/L	1	<1
		Copper	µg/L	1	<1
		Lead	µg/L	1	<1
		Nickel	µg/L	1	<1
		Zinc	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result
LB295019.001		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
LB295069.001	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
		1,1-dichloroethene	µg/L	0.5	<0.5

METHOD BLANKS

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
LB295069.001	Halogenated Aliphatics	Iodomethane	µg/L	5	<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
		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 (VOC)*	µg/L	0.5	<0.5
	Sulphonated	Carbon disulfide	µg/L	2	<2
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	110
		d8-toluene (Surrogate)	%	-	109
		Bromofluorobenzene (Surrogate)	%	-	93
	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
		Bromoform (THM)	µg/L	0.5	<0.5

METHOD BLANKS

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 Water

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

Sample Number		Parameter	Units	LOR	Result
LB295069.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	110
		d8-toluene (Surrogate)	%	-	109
		Bromofluorobenzene (Surrogate)	%	-	93

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 %
SE255833.014	LB294905.013		Mercury	µg/L	0.0001	<0.0001	<0.0001	167	0

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255848.001	LB295019.025		Naphthalene	µg/L	0.1	0.1	<0.1	147	38
			2-methylnaphthalene	µg/L	0.1	0.2	<0.1	109	51
			1-methylnaphthalene	µg/L	0.1	0.1	<0.1	162	7
			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	159	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	-	0.36	0.36	30	1
			2-fluorobiphenyl (Surrogate)	µg/L	-	0.37	0.37	30	1
			d14-p-terphenyl (Surrogate)	µg/L	-	0.37	0.39	30	5

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255899.001	LB295023.012		Total Phenols	mg/L	0.05	0.10	0.11	65	8

Trace Metals (Dissolved) in Water by ICPMS

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255779.004	LB294903.014		Arsenic	µg/L	1	4	4	39	0
			Cadmium	µg/L	0.1	<0.1	<0.1	200	0
			Chromium	µg/L	1	1	1	88	3
			Copper	µg/L	1	<1	<1	147	0
			Lead	µg/L	1	<1	<1	200	0
			Nickel	µg/L	1	2	2	78	0
			Zinc	µg/L	5	7	6	95	16
SE255833.014	LB294903.023		Arsenic	µg/L	1	<1	<1	200	0
			Cadmium	µg/L	0.1	<0.1	<0.1	200	0
			Chromium	µg/L	1	<1	<1	200	0
			Copper	µg/L	1	<1	<1	200	0
			Lead	µg/L	1	<1	<1	200	0
			Nickel	µg/L	1	<1	<1	200	0
			Zinc	µg/L	5	<5	<5	200	0

TRH (Total Recoverable Hydrocarbons) in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255779.005	LB295019.024		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

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

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

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

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

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

TRH (Total Recoverable Hydrocarbons) in Water (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255848.001	LB295019.025		TRH C10-C14	µg/L	50	<0.05	<0.05	200	0
			TRH C15-C28	µg/L	200	<0.2	<0.2	200	0
			TRH C29-C36	µg/L	200	<0.2	<0.2	200	0
			TRH C37-C40	µg/L	200	<200	<200	200	0
			TRH C10-C40	µg/L	320	<0.32	<0.32	200	0
		TRH F Bands	TRH >C10-C16	µg/L	60	<0.06	<0.06	200	0
			TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<0.06	<0.06	200	0
			TRH >C16-C34 (F3)	µg/L	500	<0.5	<0.5	200	0
			TRH >C34-C40 (F4)	µg/L	500	<0.5	<0.5	200	0

VOCs in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255779.003	LB295069.026	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
			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
			1,1-dichloroethene	µg/L	0.5	<0.5	<0.5	200	0
			Iodomethane	µg/L	5	<5	<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
			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	0.8	0.8	93	3
			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

DUPLICATES

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 %
SE255779.003	LB295069.026	Monocyclic Aromatic	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 Compounds	Acrylonitrile	μg/L	0.5	<0.5	<0.5	200	0
			2-nitropropane	μg/L	100	<100	<100	200	0
		Oxygenated Compounds	Acetone (2-propanone)	μg/L	10	<10	<10	200	0
			MtBE (Methyl-tert-butyl ether)	μg/L	2	<2	<2	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 (VOC)*	μg/L	0.5	<0.5	<0.5	200	0
		Sulphonated	Carbon disulfide	μg/L	2	5	9	57	51
		Surrogates	d4-1,2-dichloroethane (Surrogate)	μg/L	-	9.8	9.4	30	4
			d8-toluene (Surrogate)	μg/L	-	9.7	9.6	30	1
			Bromofluorobenzene (Surrogate)	μg/L	-	10.2	10	30	1
		Totals	Total BTEX	μg/L	3	<3	<3	200	0
			Total VOC	μg/L	10	<10	13	121	26
		Trihalomethanes	Chloroform (THM)	μg/L	0.5	2.4	2.9	49	18
			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
SE255871.001	LB295069.027	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
			o-xylene	μg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene (VOC)*	μg/L	0.5	<0.5	<0.5	184	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	μg/L	-	11	10	30	5
			d8-toluene (Surrogate)	μg/L	-	11	9.9	30	6
			Bromofluorobenzene (Surrogate)	μg/L	-	9.4	11	30	12
		Totals	Total BTEX	μg/L	3	<3	<3	200	0

Volatile Petroleum Hydrocarbons in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE255779.003	LB295069.026		TRH C6-C10	μg/L	50	<50	<50	200	0
			TRH C6-C9	μg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	μg/L	-	9.8	9.4	30	4
			d8-toluene (Surrogate)	μg/L	-	9.7	9.6	30	1
			Bromofluorobenzene (Surrogate)	μg/L	-	10.2	10	30	1
		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
SE255871.001	LB295069.027		TRH C6-C10	μg/L	50	<50	<50	200	0
			TRH C6-C9	μg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	μg/L	-	11	10	30	5
			d8-toluene (Surrogate)	μg/L	-	11	9.9	30	6
			Bromofluorobenzene (Surrogate)	μg/L	-	9.4	11	30	12
		VPH F Bands	Benzene (F0)	μg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	μg/L	50	<50	<50	200	0

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB295019.002		Naphthalene	µg/L	0.1	31	40	60 - 140	78
		Acenaphthylene	µg/L	0.1	34	40	60 - 140	85
		Acenaphthene	µg/L	0.1	34	40	60 - 140	86
		Phenanthrene	µg/L	0.1	35	40	60 - 140	86
		Anthracene	µg/L	0.1	34	40	60 - 140	85
		Fluoranthene	µg/L	0.1	34	40	60 - 140	86
		Pyrene	µg/L	0.1	32	40	60 - 140	79
		Benzo(a)pyrene	µg/L	0.1	36	40	60 - 140	90
	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.2	0.5	40 - 130	44
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.3	0.5	40 - 130	50
		d14-p-terphenyl (Surrogate)	µg/L	-	0.2	0.5	40 - 130	46

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB295023.002	Total Phenols	mg/L	0.05	0.20	0.2	80 - 120	102

Trace Metals (Dissolved) in Water by ICPMS

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB294903.002	Arsenic	µg/L	1	21	20	80 - 120	103
	Cadmium	µg/L	0.1	20	20	80 - 120	100
	Chromium	µg/L	1	20	20	80 - 120	100
	Copper	µg/L	1	20	20	80 - 120	98
	Lead	µg/L	1	21	20	80 - 120	105
	Nickel	µg/L	1	20	20	80 - 120	101
	Zinc	µg/L	5	20	20	80 - 120	99

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB295019.002		TRH C10-C14	µg/L	50	970	1200	60 - 140	81
		TRH C15-C28	µg/L	200	1200	1200	60 - 140	98
		TRH C29-C36	µg/L	200	1300	1200	60 - 140	105
	TRH F Bands	TRH >C10-C16	µg/L	60	1100	1200	60 - 140	88
		TRH >C16-C34 (F3)	µg/L	500	1200	1200	60 - 140	104
		TRH >C34-C40 (F4)	µg/L	500	660	600	60 - 140	109

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB295069.002	Halogenated Aliphatics	1,1-dichloroethene	µg/L	0.5	64	45.45	60 - 140	140
		1,2-dichloroethane	µg/L	0.5	61	45.45	60 - 140	134
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	62	45.45	60 - 140	137
	Halogenated Monocyclic Aromatic	Chlorobenzene	µg/L	0.5	59	45.45	60 - 140	130
		Benzene	µg/L	0.5	48	45.45	60 - 140	107
		Toluene	µg/L	0.5	51	45.45	60 - 140	113
		Ethylbenzene	µg/L	0.5	50	45.45	60 - 140	109
		m/p-xylene	µg/L	1	100	90.9	60 - 140	110
		o-xylene	µg/L	0.5	50	45.45	60 - 140	111
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.8	10	60 - 140	88
		d8-toluene (Surrogate)	µg/L	-	9.8	10	70 - 130	98
		Bromofluorobenzene (Surrogate)	µg/L	-	11.1	10	70 - 130	111
	Trihalomethan	Chloroform (THM)	µg/L	0.5	63	45.45	60 - 140	140

Volatile Petroleum Hydrocarbons in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB295069.002		TRH C6-C10	µg/L	50	870	946.63	60 - 140	92
		TRH C6-C9	µg/L	40	750	818.71	60 - 140	92
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.8	10	60 - 140	88
		d8-toluene (Surrogate)	µg/L	-	9.8	10	70 - 130	98
		Bromofluorobenzene (Surrogate)	µg/L	-	11.1	10	70 - 130	111
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	570	639.67	60 - 140	89

MATRIX SPIKES

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%
SE255777.024	LB294905.004	Mercury	mg/L	0.0001	0.0020	-0.02	0.008	102

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE255779.001	LB295023.004	Total Phenols	mg/L	0.05	0.19	<0.05	0.2	97

Trace Metals (Dissolved) in Water by ICPMS

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE255710.001	LB294903.004	Copper	μg/L	1	22	2.726	20	95

VOCs in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE255777.024	LB295069.028	Monocyclic Aromatic	Benzene	μg/L	0.5	51	0	45.45	111
			Toluene	μg/L	0.5	55	0.43755361751	45.45	119
			Ethylbenzene	μg/L	0.5	53	0.01237648249	45.45	116
			m/p-xylene	μg/L	1	110	0.03177879740	90.9	116
			o-xylene	μg/L	0.5	54	0.01484108129	45.45	118
		Polycyclic	Naphthalene (VOC)*	μg/L	0.5	48	0.03546256821	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	μg/L	-	10.8	10.6279547387	-	108
			d8-toluene (Surrogate)	μg/L	-	10.9	10.5757843782	-	109
			Bromofluorobenzene (Surrogate)	μg/L	-	10.1	9.38745183882	-	101
		Totals	Total BTEX	μg/L	3	320	0	-	-

Volatile Petroleum Hydrocarbons in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Original	Spike	Recovery%
SE255777.024	LB295069.028		TRH C6-C10	μg/L	50	0	946.63	78
			TRH C6-C9	μg/L	40	0	818.71	77
		Surrogates	d4-1,2-dichloroethane (Surrogate)	μg/L	-	10.6279547387	-	108
			d8-toluene (Surrogate)	μg/L	-	10.5757843782	-	109
			Bromofluorobenzene (Surrogate)	μg/L	-	9.38745183882	-	101
		VPH F Bands	Benzene (F0)	μg/L	0.5	0	-	-
			TRH C6-C10 minus BTEX (F1)	μg/L	50	0	639.67	66

MATRIX SPIKE DUPLICATES

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

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

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

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

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

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

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

Appendix K – Service Locator Report

A1 Locate Services
Cable & Pipe Detection

UTILITY LOCATION SERVICES
APL SITE RECORD DOCUMENT: 0969

DIAL BEFORE YOU DIG® CERTIFIED LOCATOR

DIAL BEFORE YOU DIG® www.1100.com.au The Essential First Step.

PROPOSED WORK - UNDERGROUND SERVICES LOCATING / DETECTION

Address 1 VENO ST HEATHCOTE

Cross street, Landmark HEATHCOTE HOTEL

Document / Permit / PO #

Start 8·05 Finish 10-05

ID OF PLANS OBTAINED

DBYD confirmation # 36685704

Date requested 15/5/24

Client Drawings Supplied [✓ Y] / N B90A

SUMMARY OF ACTIVITIES

Private Property / Blind Search

Plans received as per DBYD		Plans Current (check dates)		Plans show assets in vicinity		Client on site whilst locating		SWMS conducted		Assets checked		Pot Holing done		Stand by Required		Site marketing completed		Sketch		Site record submitted		JSA/ Manning sheet signed	
[✓ Y]	N	[✓ Y]	N	Y	[✓ N]	[✓ Y]	N	[✓ Y]	N	[✓ Y]	N	Y	[✓ N]	Y	[✓ N]	[✓ Y]	N	Y	[✓ N]	[✓ Y]	N	[✓ Y]	N

ASSET SUMMARY – COLOUR & CODE INTERPRETATION

UTILITIES	Code	Plan	Assets in Vicinity	Located	AS5488 QL
Power / Elect. Cables ~~(Orange)~~ PINK	E	✓	✓	✓	C/D
Communication / Data Cables (White)	C	✓	✗	—	—
Gas main (Yellow)	G	✓	✗	—	—
Water main (Blue)	W	✓	✗	—	—
Sewer (Cream)	S	✓	✗	—	—
Fire Service (Red)	F	✗	✗	—	—
Drains (Green)	D	✗	✓	✗	—
Petroleum Products (Brown)	P	✗	✗	—	—
EMF Locator Unconfirmed (Pink)	U	—	✓	✓	D
GPR Unit (Purple) Unconfirmed	U	—	✓	✓	D
Other					

ASSETS DETECTED AS PER BELOW COMMENTS

UNDERGROUND SERVICES DETECTION AT THE ABOVE LOCATION IN AREAS AS SHOWN BY CLIENT. ✓
WEATHER - FINE / RAINING & GROUND CONDITIONS - DRY / WET / OVERGROWN / UNDULATING / SATURATED

ASSET OWNERS DUTY OF CARE CHECKLIST - #1 - PLAN / #2 - PREPARE / #3 - POTHOLE / #4 - PROTECT / #5 - PROCEED
METHODS USED - GPR / EMF LOCATOR - PASSIVE / INDUCTION / CLAMP / DIRECT CONNECT

SITE VISUAL INSPECTION / CUES - SUB STATION / POWER POLES / ELECT. PILLARS / ELEVATED JOINTS / PITS / GAS METERS / WATER METERS / TAPS / VALVES / MANHOLES / DRAINS / DOWN PIPES / SEWER / IP's LIGHTS

SCOPE OF WORK - CHECK PROPOSED BORE HOLE LOCATIONS FOR U/G SERVICES IN VICINITY. ALL NOMINATED AREAS CHECKED + CLEARED SOME POSITIONS MOVED ACCORDINGLY. MARKS ON GROUND AS PER ASSET SUMMARY. AVOID DRILLING IN VICINITY OF MARKS OR KNOWN OR VISIBLE SERVICES. SOME PITS SIGHTED ADJACENT TO AREAS, UNABLE TO OPEN AT TIME OF INSPECTION. ALSO BLOCKED DRAINS ADJACENT TO AREA'S. POSSIBLE UST MARKED OUT WITH PURPLE PAINT NEXT TO UNKNOWN PIT. UST APPROX. 1.8m X 1.6m (SIZE) + APPROX. 1.0m DEEP. PIPES IN VICINITY OF PIT & TANK RUNNING NORTH/SOUTH & EAST/WEST. NO DRAWINGS PROVIDED REGARDING UST.

Note: Depths given are approximate only. *Prior to excavation, refer to the DBYD asset owners guidelines / Duty of Care. Validate underground assets by potholing by hand or using non-destructive vacuum extraction methods to directly confirm locations where conflict with construction / design may occur as per AS5488-2019 to Quality Level A, Refer to PEX Flow Chart and WORKCOVER NSW - WORK NEAR UNDERGROUND ASSETS. Due caution should also be exercised during any excavation activity, in places where utilities may reasonably be expected to occur whether located or not. PTO for Disclaimer*

APL Locator		Client Representative	
Name (Print) –	Ian Brown	Name (Print) -	SEAN NOLAN / JOEL HENINGER
Email address –	ian.brown@a1locate.com.au	Business name -	EI AUSTRALIA
Contact Tel # -	0400 48 48 28	Email address -	SEAN.NOLAN@EIAUSTRALIA.COM.AU
Date assets checked -	6 / 6 / 2024	Contact #	0430 468 538 / 0413 493 535
Signed:		Date received asset checks -	6 / 6 / 2024
		Signed:	

ACCREDITED PLANT LOCATOR

OPTUS

HUNTER TECHNOLOGY

Locating Unlimited

NULCA

RAIL INDUSTRY WORKER

Appendix L – PID Calibration Certificate

SERVICE OR REPAIR: PID MINIRAE LITE

COMPANY	EI Australia				
CONTACT	Andrew Ibrahim				
SERIAL NO.	590-913507	**CALL NO.**	SV2402220025	**RECEIVED**	11th March 2024

REQUEST/PROBLEM DESCRIPTION
Routine Calibration

This equipment has been calibrated to the manufacturer's specifications, using the standards shown below:

ISOBUTYLENE STANDARD (ppm)	TRACEABILITY LOT NO.	PRE CALIBRATION READING	POST CALIBRATION READING
0 ppm	302-402539709-26	0.0 ppm	0.0 ppm
100 ppm	WO247538-3	99.6 ppm	100 ppm

COMMENTS/ADDITIONAL REPAIRS/SERVICES PERFORMED
Verified flow. Cleaned sensor assembly and lamp. Checked battery condition. Field calibration performed as per manufacturer's specifications.

SERVICED BY	Martin Slapp	**COMPLETED**	11th March 2024
SIGNATURE	M.Slapp		