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Detailed Site Investigation

859 Mamre Road, Kemps Creek NSW

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25 November 2019

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EXECUTIVE SUMMARY

The site located at 859 Mamre Road, Kemps Creek NSW was the subject of a Detailed Site Investigation (DSI) that was conducted in order to assess the nature and degree of on-site contamination associated with current and former uses of the property as part of a future divestment / sale of the property. Based on the findings of this assessment it was concluded that:

Objectives

The main objectives of the assessment were to:

- Evaluate the potential for site contamination on the basis of historical land uses, anecdotal and documentary evidence of possible pollutant sources;
- To investigate the degree of any potential contamination by means of intrusive sampling and laboratory analysis, for relevant contaminants of concern; and
- Where site contamination is confirmed, provide data to assist in the selection and design of appropriate remedial options.

Findings

- Based on historical information, the site was vacant/grazing land up until the 1990s when a low density residential dwelling was established fronting Mamre Road. The use of the site for agricultural purposes, including a market garden appear to have been periodical since the 1990s. Storage of chemicals for agricultural use was noted during a site walkover;
- A SafeWork NSW search did not identify any underground storage tanks (USTs) or the storage of hazardous chemicals at the site;
- Penrith City Council records indicated that they were unable to locate any documents other than a Building Application relating to the existing dwelling;
- The site was free of statutory notices issued by the EPA, and was not recorded on the list of NSW Contaminated Sites Notified to the EPA/POEO public register;
- Soil sampling and analysis was conducted at one-hundred and ten (110) test bore locations:
  - The sub-surface layers comprised a layer of topsoil and/or fill overlying residual and alluvial clays, followed by weathered shale bedrock;
  - An assessment against the NEPM (2013) HIL-A/HSL-A investigation levels did not indicate soil samples (composite or individual) exceeding adopted criteria, with the exception of zinc in BH22_0.1-0.2.
  - An assessment against the NEPM (2013) and site specific EIL/ESL investigation levels did not indicate soil samples (composite or individual) exceeding adopted criteria, with the exception of zinc within shallow topsoil/fill at BH1_0.1-0.2 (130 mg/kg), BH15_0.1-0.2 (210 mg/kg), BH21_0.6-0.7 (160 mg/kg), BH62_0.1-0.2 (1200 mg/kg), BH110_0.1-0.2 (2700 mg/kg). In addition the majority of the composite samples exceeded the adjusted ecological criteria for zinc.
- Asbestos was not identified during intrusive sampling; however surface cement-fibre sheeting fragments were reported to contain asbestos in the central portion of the site.

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- Areas in the western portion of the site within former creek alignments may have been excavated and backfilled with uncontrolled fill, and the condition of this area remains unresolved.

Conclusions

Based on the findings of this investigation and with consideration of the Statement of Limitations (**Section 12**), EI conclude contamination was identified during this investigation. Areas of human health / ecological risks and locations with surface asbestos cement sheeting fragments were noted at the site, along with the possibility of uncontrolled filling in the western portion of the site.

EI conclude that the site can be made suitable for future site redevelopment (including the most sensitive land use – residential with garden/accessible soils), so long as recommendations detailed in **Section 11** are implemented.

Recommendations

Based on the findings of this DSI, the following recommendations will be required to be implemented before the site can be confirmed as suitable for future site redevelopment (including the most sensitive land use – residential with garden/accessible soils):

- A Remediation Action Plan (RAP) should be prepared prior to the commencement of any remediation works. The RAP will provide details of the methodology and procedures required for effective site remediation, including:
  - Sampling Analysis and Quality Plan (SAQP) for the validation and remediation activities performed on-site;
  - Design of supplementary investigations to close the data gaps identified during this investigation (**Section 9.1**);
  - Waste classification assessment, in order to enable classification of any surplus site soils to be excavated and disposed off-site during remediation works and material imported to the site, in accordance with the NSW EPA (2014) *Waste Classification Guidelines and Waste Regulations;*
  - Work health and safety considerations, and
  - Contingency plan to address unexpected finds.
- Preparation of a final site validation report by a suitably qualified environmental consultant, certifying the site suitability of soils for the future intended land use (including the most sensitive land use – residential with garden/accessible soils).

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1. INTRODUCTION

1.1 Background and Purpose

Master Empire Constructions Pty Ltd engaged EI Australia (EI) to conduct a Detailed Site Investigation (DSI) for site characterisation purposes at the site located at 859 Mamre Road, Kemps Creek NSW ('the site').

As shown in **Figure A.1**, the site is located within the Local Government Area of Penrith City Council. The land parcels are also identified as Lot 30 in DP258414. The site covers a total area of approximately 31 hectares (ha), as depicted in the site plan presented as **Figure A.2**.

This assessment was conducted for due diligence purposes, to assess the potential for contamination on the property, as part of future divestment / sale of the property. Additionally, this assessment is to enable future developers of the land to meet the requirements of *State Environmental Planning Policy 55* (SEPP-55) *Remediation of Land* and obligations under the *Contaminated Land Management Act 1997* (CLM Act), for the assessment and management of contaminated soil and/or groundwater.

1.2 Proposed Development

At the time of writing this report, no development plans had been provided by the Client. However, it is understood it is understood that this investigation was to accompany future sale and development of the property.

1.3 Regulatory Framework

The following regulatory framework and guidelines were considered during the preparation of this report:

- *Contaminated Land Management Act 1997*;
- DEC (2007) Guidelines for the Assessment and Management of Groundwater Contamination;
- EPA (1995) Sampling Design Guidelines;
- NEPC (2013) Schedule B(1) Guideline on Investigation Levels for Soil and Groundwater;
- NEPC (2013) Schedule B(2) Guideline on Site Characterisation;
- OEH (2011) Guidelines for Consultants Reporting on Contaminated Sites;
- *Penrith Development Control Plan 2014;*
- *Penrith Local Environmental Plan 2010*; and
- *State Environment Protection Policy 55 (SEPP 55) – Remediation of Land*.

1.4 Project Objectives

The primary objectives of this investigation were to:

- Evaluate the potential for site contamination on the basis of historical land uses, anecdotal, and documentary evidence of possible pollutant sources;
- To investigate the degree of any potential contamination by means of limited intrusive sampling and laboratory analysis, for relevant contaminants; and

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- Where site contamination is confirmed, make recommendations for the appropriate management of any contaminated soils and/or groundwater.

1.5 Scope of Works

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

1.5.1 Desktop Study

- A review of relevant topographical, geological, hydrogeological and soil landscape maps for the project area;
- A search of EPA databases relating to statutory notices or actions current on the site, or site in proximity;
- A search of historical aerial photographs archived at the NSW Land and Property Information in order to review previous site use and the historical sequence of land development in the neighbouring area;
- A site history survey involving a detailed search of Council records for information relating to operational site history and potential contamination events;
- A land titles search, also conducted through NSW Land and Property Information;
- A search of SafeWork NSW records for information relating to possible underground tank approvals and locations, and potential dangerous goods storages;
- Preparation of a Work, Health, Safety & Environmental Plan;
- Preparation of proposed bore location plan, and brief fieldwork plan including potential impacts on current site operations; and
- Review of DBYD plans and any plans provided by the client of existing buried services on site.

1.5.2 Fieldwork and Laboratory Analysis

- Supervision of sub-contractor to carry out underground search for buried services using elector-magnetic equipment;
- A detailed site walkover inspection;
- Drilling of boreholes at one-hundred and ten (110) locations, distributed in a triangular grid pattern across the site;
- Multiple level soil sampling within fill and natural soils;
- Laboratory analysis of selected soil samples for relevant analytical parameters as determined from the site history survey and field observations during the investigation program.

1.6 Data Analysis and Reporting

A DSI report would be prepared to document the desk study findings, the conceptual site model, data quality objectives, investigation methodologies and results. The report would also provide a record of observations made during the detailed site walkover inspection, borehole and monitoring well construction logs and a discussion of laboratory analytical results in regards to potential risks to human health, the environment and the aesthetic uses of the land.

2. SITE DESCRIPTION

2.1 Property Identification, Location and Physical Setting

The site identification details and associated information are presented in **Table 2-1**, while the site locality is shown in **Figure A.1**.

Table 2-1 Site Identification, Location and Zoning

Attribute	Description
Street Address	859 Mamre Road, Kemps Creek NSW
Location Description	The site itself comprises a residential dwelling fronting Mamre Road, with market garden farmland and several work sheds. Power lines and a portion of Kemps Creek intersect the central portion of the site, followed by vacant land covering the western portion.
Site Coordinates	North-east corner of site (GDA94-MGA56) Easting: 294720.493 Northing: 6252801.981 (Source: http://maps.six.nsw.gov.au)
Site Area	Approximately 31 ha (Source: http://maps.six.nsw.gov.au)
Lot and Deposited Plan (DP)	Lot 30 in DP258414.
State Survey Marks	Two State Survey (SS) marks are situated in proximity to the site: ▪ PM33563: 105 m south of the site, on Mamre Road; and ▪ PM33564: 95 m south of the site, on Mamre Road; (Source: http://maps.six.nsw.gov.au).
Local Government Authority	Penrith City Council
Parish	Melville
County	Cumberland
Current Zoning	RU2: Rural Landscape (for the majority of the site) E2: Environmental Conservation (Kemps Creek riparian corridor) (Penrith Local Environment Plan 2010)

2.2 Surrounding Land Use

The site is situated within an area of both residential and agricultural land use on surrounding land as described in **Table 2-2**. The local sensitive receptors within close proximity to the site are also identified.

Table 2-2 Surrounding Land Uses

Direction	Land Use Description	Sensitive Receptors (distance from site)
North	Rural-residential dwelling and agricultural/vacant land.	Residential dwellings, approximately 30 m north of the site, along with Kemps Creek and South Creek (which directly border the northern boundary). Additionally, portions of Kemps Creek and South Creek run through the site.
South	Rural-residential dwelling and market garden farmland.	Residential dwellings and Kemps Creek, both adjacent to the southern boundary.
East	Mamre Road followed by rural-residential dwellings and market garden farmland.	Residential dwellings, approximately 65 m east of the site, and market garden farmland.
West	Undeveloped / grazing land and South Creek.	South Creek, located directly adjacent to the western boundary of the site. Additionally, South Creek runs through a portion of the site.

2.3 Regional Setting

Local topography, geology, soil landscape and hydrogeological information are summarised in **Table 2-3**.

Table 2-3 Regional Setting Information

Attribute	Description
Topography	The local topography of the site is generally flat with a slight fall towards the east (Kemps Creek). Steep rises (dam wall) damming Kemps Creek are noted. Gentle undulating rises and falls are apparent in the eastern most part of the site across the open land.
Site Drainage	As the majority of the site is currently unpaved, stormwater is expected to infiltrate directly into exposed soils. Surface runoff is expected to flow westerly, downslope towards Kemps Creek.
Regional Geology	With reference to the 1:100 000 scale Geological Series Penrith Sheet 9030 (Ref. DMR, 1991), the site is underlain by Holocene and Pleistocene elements of fine-grained sands, silts and clays (*Qal*).

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Attribute	Description
Soil Landscapes	The Soil Conservation Service of NSW Soil Landscapes of Penrith 1:100,000 Sheet (Chapman and Murphy, 2002) indicates that the site overlies the residual *Blacktown Landscape (bt)* and the alluvial *South Creek Landscape (sc)*. The Blacktown Landscape includes gently undulating rises on Wianamatta Group shales. Local relief up to 30 m, with slopes usually broad rounded crests and ridges, with gently inclined slopes. Soils are shallow to moderately deep hard setting mottled texture-contrast soils, including red and brown podzolic soils on crests grading to yellow podzolic soils on lower slopes and in drainage lines. The South Creek Landscape includes floodplains, valley flats, and drainage depressions and incised channels on the Cumberland Plain. Soils are often very deep layered sediments over bedrock or relict soils. Where pedogenesis has occurred, structured plastic clays or structured loams in and immediately adjacent to drainage lines occur. Red and yellow podzolic soils are most on common terraces, with structured grey clays, leached clays and yellow solodic soils.
Acid Sulfate Soil Risk	There was no Acid Sulfate Soils (ASS) risk classification map pertaining to the site available through the Department of Land and Water Conservation. There was no Acid Sulfate Soils (ASS) risk classification map pertaining to the site available on the Penrith Local Environmental Plan 2010. Given the above information, further Acid Sulfate Soils Assessment is not warranted.
Likelihood & Depth of Filling	Where fill was identified across the site, the approximate depth of fill was approximately 0.4 mBGL. Based on observations during intrusive investigations, the maximum depth of fill was recorded at approximately 0.8 mBGL.
Typical Soil Profile	Silty topsoil, overlying residual and alluvial clays, followed by shale bedrock.
Depth to Groundwater	Groundwater was not assessed during this investigation; however, groundwater was encountered during drilling within proximity to Kemps Creek, at approximately 2.5 and 3.3 mBGL.
Nearest Surface Water Feature	Kemps Creek, located within the western portion of the site.
Anticipated Groundwater Flow Direction	Groundwater is anticipated to flow hydraulically west, towards Kemps Creek.

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2.4 Site Walkover Inspection

Site observations were recorded during a site walkover inspection on 24 and 25 July, 2019. A summary of site observations are detailed below, with site photographs taken during the inspection presented in **Appendix C**.

- The site included a residential dwelling fronting Mamre Road in the east (**Photograph 1**), with agricultural market garden farmland occupying the central portion of the property.
- An unsealed road traverses the northern boundary of the site, linking the western portion of the property (**Photograph 2**).
- Fenced off grazing areas for animals including sheep, chickens, and ducks were noted within the eastern portion of the site, directly west/north-west of the dwelling (**Photograph 3** and **4**).
- Several site sheds for machinery/equipment storage are located throughout the central portion of the site (**Photograph 5**, **6** and **7**). Agricultural chemicals (nutrients, minerals and herbicides) were present within these storage areas (Shirquat, Coco B, Monsta Bud, Add Bud, Canna Coco).
- Small stockpiles of plastic bags filled with general rubbish and garden mulch were located near the site sheds (**Figure A.5**) (**Photograph 8**).
- Fragments of cement-fibre sheeting were identified within the vicinity of the site sheds and market garden areas. Some fragments appeared to have been mechanically pressed in to the topsoil horizon (**Figure A.5**) (**Photograph 9**).
- Power lines intersected the property across the central portion, east of Kemps Creek. The power lines appear to be placed on a rise of soil and/or concrete (**Figure A.5**) (**Photograph 10** and **11**).
- Kemps Creek is located towards the central-western portion of the site, with materials surrounding the creek forming a man-made dam. To the east of Kemps Creek lies a narrow wetland/creek system (**Photograph 12**, **13** and **14**).
- Use of water from Kemps Creek for irrigation on the site was evident due to the presence of hoses and pumps on top of the dam wall (**Photograph 15**, **16** and **17**). Sydney Water appeared to be managing water extraction via metering infrastructure, located south of the power lines, and east of Kemps Creek (**Photograph 18**).
- The western portion of the site consisted of undeveloped/grazing land (**Photograph 18** and **19**).
- A pre-dam meander bend (now abandoned) of Kemps Creek was noted to the north of the dam wall. Field observations indicate that section of the meander bend have been backfilled with bricks and concrete slabs. A number of potentially backfilled areas were also noted within the western portion of the site (**Figure A.5**) (**Photograph 20, 21** and **22**).

3. SITE HISTORY AND SEARCHES

3.1 Land Titles Information / Historic Aerial Review

A historical land titles search was conducted through InfoTrack Pty Ltd. Copies of relevant documents resulting from this search are presented in **Appendix D**. A summary of all the previous and current registered proprietors along with information obtained from the available historical aerial photographs, in relation to past potential land uses are presented in **Table 3-1**.

The historical aerial photographs and historical city plans reviewed as part of this DSI included:

- 1955: Department of Lands, NSW 226-5146, B/W;
- 1970: Department of Lands, NSW 1909-5181, B/W;
- 1986: Department of Lands, NSW 3528-100;
- 1998: Department of Lands, NSW 4452 – Penrith 1:25000;
- 2005: Department of Lands, NSW 4937 – Penrith 1:25000; and
- 2019: Six Maps (https://maps.sic.nsw.gov.au)

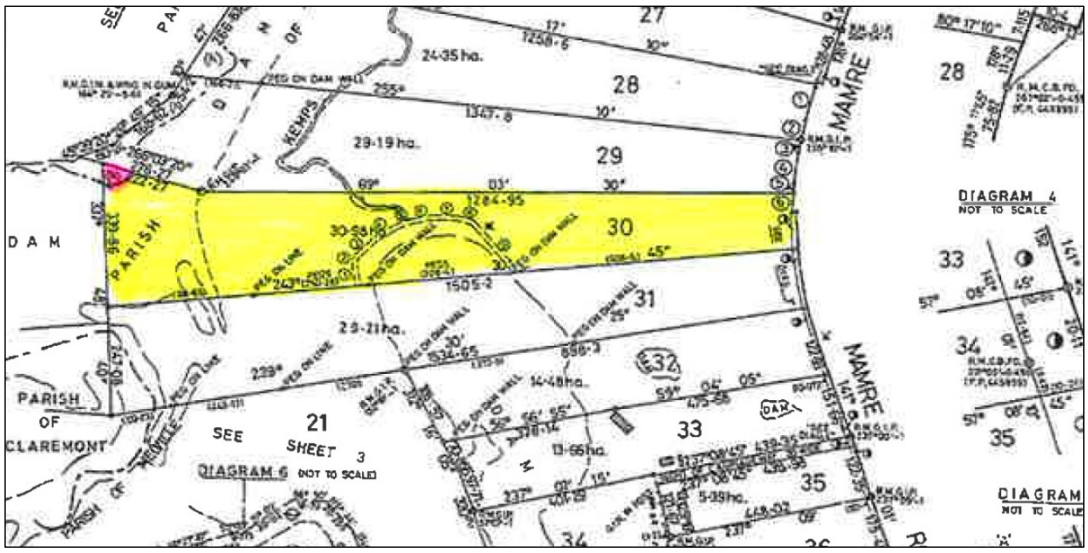


Figure 3-1 Site Area

The cadastral extent of the site is identified within the highlighted portions of **Figure 3-1**.

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Table 3-1 Summary of Owners and Historical Aerial Photography

Date of Acquisition and term held	Registered Proprietor(s) & Occupations (where documented)	Site description based on historical aerial photographs
As regards the part tinted yellow of Lot 30 DP.258414 on the attached Cadastre (Figure 3-1)		
21.09.1916 (1916 to 1934)	Henry Horton (Grazier) (& his deceased estate)	-
28.06.1934 (1934 to 1945)	Greenfield Limited	-
17.01.1945 (1945 to 1954)	Joseph Henry Bawn (Butcher) Richard Setten Stone (Butcher)	-
16.02.1954 & 19.05.1954 (1954 to 1968)	J.H. Bawn Pty Limited	**1955:** The land parcel on the map indicates that the site was vacant land. No visible dwellings or buildings can be seen on the site in the imagery. One small dam appears to be located in the central portion of the site. South Creek south-west of the site, with Kemps Creek flowing through the south-western portion of the site.
25.01.1968 (1968 to 1989)	Number Two Fleurs Pty Limited	**1970:** Site appears relatively unchanged from the previous photograph, with the exception of some excavation and shaping of the land around Kemps Creek. These works likely relate to the original formation of the large dam. **1986:** Site remains relatively unchanged from the previous photograph, with the exception of the dam adjacent to Kemps Creek (largely constructed). The power lines have been installed on the site near the dam on Kemps Creek.
As regards the part tinted pink of Lot 30 DP.258414 on the attached Cadastre (Figure 3-1)		
31.01.1935 (1935 to 1935)	Ernest Frederick Charker (Contractor)	-
27.02.1935 (1935 to 1938)	Nellie Christie (Married Woman)	-
11.06.1938 (1938 to 1945)	Patrick Michael McGirr (Grazier)	-
17.01.1945 (1945 to 1954)	Joseph Henry Bawn (Butcher) Richard Setten Stone (Butcher)	-

Date of Acquisition and term held	Registered Proprietor(s) & Occupations (where documented)	Site description based on historical aerial photographs
16.02.1954 &19.05.1954 (1954 to 1968)	J.H. Bawn Pty Limited	**1955:** The land parcel on the map indicates that the site was vacant land. No visible dwellings or buildings can be seen on the site in the imagery. One small dam appears to be located in the central portion of the site. South Creek south-west of the site, with Kemps Creek flowing through the south-western portion of the site.
25.01.1968 (1968 to 1989)	Number Two Fleurs Pty Limited	**1970:** Site appears relatively unchanged from the previous photograph, with the exception of some excavation and shaping of the land around Kemps Creek. These works are likely the original formation of the large dam. **1986:** Site remains relatively unchanged from the previous photograph, with the exception of the dam that is Kemps Creek largely constructed. The power lines have been installed on the site near the dam of Kemps Creek.
08.06.1989 (1989 to date)	# Donato D'Ascanio # Lucia D'Ascanio	**1998:** The residential dwelling has been established fronting Mamre Road. The land immediately south-west of residential dwelling appears to be used as farmland/market gardens. A shed has appeared on the northern boundary of the site. **2005:** The site appears unchanged from the previous photograph, with the exception of the land immediately south-west of the residential dwelling no longer used for farmland/market gardens. **2019:** Site appears unchanged from the previous photograph, with the exception of the land immediately south-west of the residential dwelling again used for farmland/market gardens. Additional sheds have been constructed throughout the farmland.

Notes:
# Denotes current registered proprietor

In summary, review of land titles records, historical maps and aerial photography revealed that the site was un-occupied from the 1950s, and used as vacant/grazing land. Kemps Creek used to flow through the site until it was dammed sometime in the 1970s. The powerlines that run through the site were installed sometime between 1970 and 1986, and have stayed to the present day. The market gardens that are evident now were introduced likely throughout the 1990s, as was the residential dwelling and shed located on the site. These gardens were abandoned sometime in the early 2000's, before being reintroduced, and are still in use today.

3.2 Surrounding Lands Historical Aerial Photography Review

As part of the site Land Titles Information / Historic Aerial Review, an assessment of surrounding land uses using historical aerial photographs sourced from NSW Land and

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Property Information was carried out. A summary of the pertinent information identified at surrounding land parcels from the reviewed photographs is presented in **Table 3-2**.

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Table 3-2 Summary of Aerial Photograph Review

Aerial Photograph	Surrounding land uses based on historical aerial photographs
1955	**North:** The site is bound by vacant/grazing land to the north. **South:** The site is bound by vacant/grazing land to the south. **East:** The site is bound by vacant/grazing land to the east. A road/track (Mamre Road) can be seen in the aerial photograph bordering the east of the site. **West:** The site is bound by vacant/grazing land to the west. Additionally, South Creek is evidenced in the aerial photographs to the west of the site. The site was surrounded by vacant/grazing land.
1970	**North:** Remained relatively unchanged. **South:** Remained relatively unchanged, with the exception of some buildings constructed to the south of the site. The buildings appear to be a mix of a residential dwelling and farm sheds. **East:** Remained relatively unchanged. **West:** Remained relatively unchanged.
1986	**North:** Remained relatively unchanged. **South:** Remained relatively unchanged. **East:** Remained relatively unchanged, with the exception of formerly vacant land used for agriculture and farming opposite Mamre Road. **West:** Remained relatively unchanged, with the exception of the dam constructed at Kemps Creek.
1998	**North:** Remained relatively unchanged. **South:** Remained relatively unchanged. **East:** Remained relatively unchanged, with the exception of formerly vacant land used for agriculture and farming opposite Mamre Road. **West:** Remained relatively unchanged, with the exception of the dam constructed at Kemps Creek.
2005	**North:** Neighbouring properties to the north have had residential dwellings constructed on them, fronting Mamre Road. Some increased use of the land for farming/agricultural purposes is evident. **South:** Remained relatively unchanged, with the exception of increased use of the land for farming/agricultural purposes noted. **East:** Remained relatively unchanged, with the exception of increased use of the land for farming/agricultural purposes noted. **West:** Remained relatively unchanged, with the exception of the formation of South Creek noticeably larger. Kemps Creek Resource Recovery Park can be seen to the south-west of the site, past Kemps Creek and South Creek.
2019	**North:** The neighbouring property the north appears to have been used for some sort of agricultural purpose, as the majority of the grass looks to be in a decayed state. The remaining properties to the north appear relatively unchanged. **South:** Remained relatively unchanged. **East:** Remained relatively unchanged. **West:** Remained relatively unchanged.

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In summary, review of historic maps and aerial photography showed that from the 1950s, the surrounding land use consisted of predominantly vacant/grazing land. An increase in use of the surrounding lands for agriculture and farming progressed throughout the 1970s and 1980s, with the surrounding uses remaining relatively unchanged until the present day.

3.3 Council Information

An application to access records held by Penrith City Council was initiated on 9 July 2019. Council correspondence was received on 29 July 2019, with Council unable to locate any documents relating to the request, other than a building application for the original residential dwelling.

3.4 SafeWork NSW Records Search

A search of SafeWork NSW records relating to the site was requested on 16 July, 2019 by EI. Correspondence dated 1 August 2019 was received by EI (**Appendix E**), and confirmed that no records pertaining to the premises were held in the Stored Chemical Information Database (SCID) and microfiche records held by SafeWork NSW.

3.5 EPA Online Records

On 9 September 2019, an on-line search of the contaminated land public record of NSW Environment Protection Authority (EPA) Notices was conducted. This search confirmed that the site had no regulatory involvement in relation to the area of investigation, or properties in proximity to the Site. The contaminated land public record is a searchable database of:

- Orders made under Part 3 of the *Contaminated Land Management Act 1997* (CLM Act);
- Approved voluntary management proposals under the CLM Act that have not been fully carried out and where the approval of the EPA has not been revoked;
- Site audit statements provided to the EPA under Section 53B of the CLM Act that relate to significantly contaminated land;
- Where practicable, copies of any documentation formerly required to be part of the public record; and
- Actions taken by the EPA under Sections 35 and 36 of the *Environmentally Hazardous Chemicals Act 1985*.

A search through the List of NSW Contaminated Sites notified to the EPA under Section 60 of the CLM Act 1997 was also conducted on 9 September 2019. This list is maintained by NSW EPA and includes properties on which contamination has been identified. Not all notified land is deemed to be impacted significantly enough to warrant regulation by the EPA. The site has not been notified as contaminated to the EPA, nor has any site within close proximity.

A search of the Protection of the Environment Operations (POEO) Act public register, regarding environmental protection licences, applications, notices, audits, pollution studies, and reduction programmes was carried out on 9 September 2019. The search identified no locations within close proximity to the site.

3.6 Groundwater Bore Records and Local Groundwater Use

An online search of registered groundwater bores was conducted by EI on the 9 September 2019, through Water NSW (Ref. https://www.waternsw.com.au/supply/real-time-data). The search returned no registered bores located within a 500 m radius of the site. The search results are attached in **Appendix F**.

4. CONCEPTUAL SITE MODEL

In accordance with NEPM (2013) Schedule B2 – Guideline on Site Characterisation and to aid in the assessment of data collection for the site, EI developed a conceptual site model (CSM) as part of this investigation to assess plausible pollutant linkages between potential contamination sources, migration pathways and receptors. The CSM provides a framework for the review of the reliability and useability of the data collected and to identify data gaps in the existing site characterisation.

4.1 Per or Poly-fluoroalkyl Substances (PFAS)

The EPA (2017) Auditor Guidelines require that PFAS substances are considered in assessing contamination. EI used the following Decision Tree (**Table 4-1** below) based on EnRisk (2016) for prioritising the potential for PFAS compounds being present on Site and whether PFAS sampling of soil and water is required. This also considers the list of activities outlined in Appendix B of the PFAS NEMP (2018).

Table 4-1 PFAS Decision Tree

Preliminary Screening	Decision
Did fire training occur on-site?	No
Did fire training occur, or is an airport or fire station up-gradient of or adjacent to the site? [1]	No
Have “fuel” fires ever occurred on-site? (e.g. ignition of fuel (solvent, petrol, diesel, kerosene) tanks?)[2]	Part
Have PFAS been used in manufacturing or stored on-Site ?[3]	No
If Yes to any questions, has site analytical suite been optimised to include preliminary sampling and testing for PFAS in soil (ASLP Testing) and water?	No

Note 1 Runoff from fire training areas may impact surface water, sediment and groundwater.
Note 2 Unless specific fuel fires have been documented in historical information, it has been assumed that no fuel fires have occurred
Note 3 PFAS is used wide range of industrial processes and consumer products, including in the manufacture of non-stick cookware, specialised garments and textiles, Scotchguard™ and similar products (used to protect fabric, furniture, leather and carpets from oils and stains), metal plating and in some types of fire-fighting foam (https://www.nicnas.gov.au/chemical-information/factsheets/chemical-name/perfluorinated-chemicals-pfas)

4.2 Emerging Chemicals

The NSW EPA uses Chemical Control Orders (CCOs) as a primary legislative tool under the EHC Act (1985) to selectively and specifically control particular chemicals of concern, and limit their potential impact on the environment. CCOs provide the EPA a rapid and flexible mechanism for responding to emerging chemical issues. As with PFAS compounds, EI has considered chemicals controlled by CCOs, and other potential emerging chemicals, as outlined in **Table 4-2** below.

Table 4-2 Emerging or Controlled Chemicals

Chemicals of Concern (CCO or emerging)	Decision
Were aluminium smelter wastes used or stored on Site (CCO, 1986)?	No
Do dioxin contaminated wastes (CCO, 1986) have the potential to impact the Site? [1]	No
Were organotin products (CCO, 1989) used or stored on Site? [2]	No
Were polychlorinated biphenyls (PCBs) used or PCB wastes (CCO, 1997) stored on-Site? [3]	Yes *Old fluorescent lights may have been used.*
Were scheduled chemical or wastes (CCO, 2004) used or stored [4]	Yes *Organochlorine pesticides for termite and pest control may have been used*
Are other emerging chemicals suspected? [5]	No
If Yes to any questions, has site sampling suite been optimised to include specific sampling for other chemicals of concern in soil, air, and water	Yes

Note 1 From burning of certain chemicals, smelting or chemical manufacturing or fire on or near the Site.
Note 2 From anti-fouling paints used or removed at boat & ship yards and marinas.
Note 3 From older transformer oils & electrical capacitors
Note 4 Twenty-four mostly organochlorine pesticides and industrial by-products
Note 5 Other chemicals considered as emerging e.g. 1,4 dioxane (associated with some cVOCs).

4.3 Potential Contamination Sources

On the basis of the findings of the current investigation and former investigations, potential contamination sources are as follows:

- Unknown type and concentration of contaminants within any anthropogenic fill imported to the site for levelling or other purpose;
- Deeper natural soils containing residual impacts, representing potential secondary sources of contamination;
- Use and weathering of building structures (i.e. painted surfaces, metallic structures, cement-fibre sheeting including ACM, etc.);
- Possible impacts from historic use of pesticides;
- Impacts from uncontrolled demolition of historic site structures;
- Spills and leaks from parked vehicles; and
- Impacts from use of the site for farming and as a market garden, including possible herbicide use.

4.4 Contaminants of Potential Concern

- **Soil:**
  - Heavy metals (HM), total recoverable hydrocarbons (TRH), the monocyclic aromatic hydrocarbon compounds: *benzene, toluene, ethyl-benzene* and *xylenes* (BTEX), polycyclic aromatic hydrocarbons (PAH), organochlorine and organophosphorus pesticides (OCP/OPP), polychlorinated biphenyls (PCB), herbicides, and asbestos.

4.5 Potential Sources, Exposure Pathways and Receptors

Potential contamination sources, exposure pathways and human and environmental receptors that were considered relevant for this assessment are summarised along with a qualitative assessment of the potential risks posed by complete exposure pathways in **Table 4-3**.

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Table 4-3 Conceptual Site Model

Potential Sources	Impacted Media	Contaminants of Potential Concern	Transport mechanism	Exposure pathway	Potential receptor
▪ Fill soils of unknown origin ▪ Possible impacts from historic use of pesticides beneath site structures ▪ Impacts from uncontrolled demolition of historic site structures ▪ Spills and leaks from parked vehicles ▪ Deeper natural soils containing residual impacts, representing potential secondary sources of contamination ▪ Impacts from use of the site as for farming and market garden activities.	Soil	HM, TRH, PAH, OCP/OPP, PCB, herbicides, and BTEXN	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 dust particulates	Construction and maintenance workers End users of the site post redevelopment
			Atmospheric dispersion from soil to outdoor and indoor air spaces	Inhalation dust particulates	
		F1 and F2 TRH, and BTEXN	Volatilisation of contamination from soil and diffusion to indoor air spaces	Inhalation of vapours from impacted soil	
		HM, TRH, PAH, OCP, BTEXN	Plant uptake of contamination present in root zone	Plant uptake	Future ecological receptors (e.g. site vegetation in landscaped areas post redevelopment)
Building fabrics containing hazardous materials	-	Lead, PCB and asbestos	Release of hazardous materials during uncontrolled demolition of building fabrics	Ingestion; Dermal contact; Inhalation of airborne contaminants	Construction and maintenance workers

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4.6 Data Gaps

Based on the CSM derived for the site and the above qualitative assessment of risks, the following data gaps have been identified:

- Unknown quality of fill and natural soils at the site;
- Uncertainty in regards to weathering of former building structures (i.e. painted surfaces, metallic structures, cement-fibre sheeting, etc.);
- Uncertainty in regards to possible impacts from historic use of herbicides and pesticides beneath site structures or garden areas;
- Uncertainty in regards to the migration of contamination onto site from neighbouring properties and unknown contamination sources; and
- Uncertainty in regards to hazardous materials, including potential asbestos-containing materials (ACM) from building products used onsite.

4.7 Summary of Potential Contamination

EI considers there is a low to medium risk for contamination to be present on-site. The available historical information presented in **Section 3** indicated that the site was vacant/grazing land up until the 1990s when a low density residential dwelling was established fronting Mamre Road.

The use of the site for agricultural purposes, including a market garden are what pose the low-medium risk of contamination, which appear to have been periodical since the 1990s. Storage of chemicals for agricultural use, along with workshops for farming equipment, pose an additional risk.

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5. SAMPLING, ANALYTICAL AND QUALITY PLAN (SAQP)

The SAQP ensures that the data collected as part of the environmental works carried out at the site are representative, and provide a robust basis for site assessment decisions. This SAQP includes the following:

- Data quality objectives, including a summary of the objectives of the ESA;
- Investigation methodology including media to be sampled, details of analytes and parameters to be monitored and a description of intended sampling points;
- Sampling methods and procedures;
- Field screening methods;
- Analysis Methods;
- Sample handling, preservation, and storage; and
- Analytical QA/QC.

5.1 Data Quality Objectives (DQO)

In accordance with the US EPA (2006) *Data Quality Assessment* and the EPA (2017): *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme*, the process of developing Data Quality Objectives (DQO) was used by the EI assessment team to determine the appropriate level of data quality needed for the specific data requirements of the project. The DQO process that was applied for this assessment is documented in **Table 5-1**.

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Table 5-1 Summary of Project Data Quality Objectives

DQO Steps	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 located at 859 Mamre Road, Kemps Creek NSW includes a residential dwelling fronting Mamre Road, with market garden farmland and serval work sheds evident. Power lines and a portion of Kemps Creek intersect the central portion of the site, followed by vacant land covering the eastern portion. This investigation is required to quantify any potential contamination to enable the developer to meet their requirements under the *Contaminated Land Management Act 1997* (CLM Act). A review of site history (summarised in **Section 3**) identified potential contamination that may be present in site soil, contributed by various potential sources listed in **Section 4.3** and summarised in **Section 4.5**. The site is to be sold for future site redevelopment. The most conservative proposed site use: ▪ Residential with garden/accessible soils. ‣ HIL-A / HSL-A&B; and ‣ EIL / ESL. This investigation is required to characterise the condition of site soils and enable the developer to meet their obligations under *State Environmental Planning Policy 55* (SEPP-55) and the *Contaminated Land Management Act 1997* (CLM Act), for the assessment and management of contaminated soil and/or groundwater.
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 1.4**, the decisions that need to be made are: ▪ Has the nature, extent and source of any soil impacts onsite been defined? ▪ What impact do the site specific, geologic and hydrogeological conditions have on the fate and transport of any impacts that may be identified? ▪ Does the level of impact coupled with the fate and transport of identified contaminants represent an unacceptable risk to identified human and/or environmental receptors on or offsite? ▪ Does the collected data provide sufficient information to allow the suitability of the site to be determined, or 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?

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DQO Steps	Details
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 include: ▪ Potential residential end land use; ▪ Aerial photographs, historical land title records, and Council records; ▪ National and NSW EPA guidelines endorsed under the *NSW Contaminated Land Management Act 1997*; ▪ Soil samples and observations obtained from intrusive investigation at locations, and to depths deemed appropriate for investigative purposes (or prior refusal); ▪ Investigation sampling to quantify soil contamination and to evaluate the potential risks to receptors; and ▪ Laboratory analysis of selected soil samples will comprise COPC presented in **Section 4.4.** At the end of the assessment, a decision must be made regarding whether the environmental conditions are suitable for the proposed redevelopment, or if additional investigations are required to confirm site suitability, or remedial works to make the site suitable for the proposed use.
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 cadastral boundaries of the site; Vertical – From the existing ground level to natural soils; and Temporal – The results will be valid on the day samples are collected and will remain valid as long as no changes occur in regards to site use, and contamination (if present) does not migrate onto 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 are: ▪ What are the characteristics of soil at the site? Soil boreholes will be advanced to natural, sampled and logged to characterise underlying conditions. ▪ Is the site suitable for the proposed land use? If the concentrations of contaminants in the soil and groundwater data are below the relevant health-based and ecological criteria for the intended land use; then the site will be deemed suitable for the proposed development. ▪ Is additional information required to determine the suitability of the site for its proposed use? Should additional information be required as determined by the conceptual site model (CSM), then appropriate recommendations will be provided. ▪ Decision criteria for analytical data are defined by the Data Quality Indicators (DQI) in **Table 5-2.**

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DQO Steps	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 are to be in accordance with the National and NSW EPA guidance, and appropriate indicators of data quality and standard procedures for field sampling and handling. This should include the following points to quantify tolerable limits: ▪ The null hypothesis for the investigation is that the 95% Upper Confidence Limits (UCL) of the mean for contaminants of concern exceed relevant commercial / industrial land use criteria across the site. ▪ The acceptance of the site will be based on the probability that: ‣ The 95% UCL of the mean of the data will satisfy the given site criteria. Therefore, a limit on the decision error will be 5% that a conclusive statement may be incorrect; ‣ The standard deviation of the results is less than 50% of the relevant remediation acceptance criterion; and ‣ No single results exceed the remediation acceptance criteria by 250% or more. ▪ Soil concentrations for chemicals of concern that are below investigation criteria made or approved by the NSW EPA will be treated as acceptable and indicative of suitability for the proposed land use(s). ▪ If contaminant concentrations in soil exceed the adopted criteria, further investigation will be considered prudent. If no contamination is detected, no further action is 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 for general data that are expected to satisfy the DQOs: ▪ One-hundred and ten (110) sampling locations are proposed for the site using a triangular grid pattern across accessible areas of the site. ▪ An upper soil profile sample will be collected at each borehole location, with twenty (20) discrete soils samples tested for COPCs, to assess the conditions of the fill/topsoil layer, and impacts from activities at ground level. ▪ Thirty (30) composite samples will be created from collected fill/topsoil samples and tested for contaminants of HMs, OCPs and OPPs. ▪ A further ten (10) discrete natural samples will be analysed for HMs, TRHs, BTEX and PAHs. Samples will be selected based on field observations (including visual and olfactory evidence, as well as soil vapour screening in headspace samples) whilst giving consideration to characterise the subsurface soil stratigraphy. ▪ Written instructions will be issued to guide field personnel in the required fieldwork activities; ▪ Field screening for potential VOC contamination will be carried out with a portable Photo-Ionisation Detector (PID); ▪ Representative soil samples will be collected from the site and analysed to allow characterisation of soils; and ▪ Review of the results will be undertaken to determine if further excavation and additional sampling is warranted. Additional investigations would be considered to be warranted where soil concentrations are found to exceed remediation criteria endorsed by the NSW EPA, relevant to the proposed land use(s).

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5.2 Data Quality Indicators

To ensure that the validation data were of an acceptable quality, they were assessed against the data quality indicators (DQI) outlined in **Table 5-2**, which related to both field and laboratory-based procedures. The overall assessment of data quality is discussed in **Section 7**.

Table 5-2 Summary of Project Data Quality Objectives

QA/QC Measures (PARC)	Data Quality Indicators
Precision – A quantitative measure of the variability (or reproducibility) of data	Data precision would be assessed by reviewing the performance of blind field duplicate sample sets, through calculation of relative percentage differences (RPD). Data precision would be deemed acceptable if RPDs are found to be less than 30%. 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.
Accuracy – A quantitative measure of the closeness of reported data to the "true" value	Data accuracy would be assessed through the analysis of: ▪ Method blanks, which are analysed for the analytes targeted in the primary samples; ▪ Matrix spike and matrix spike duplicate 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 is representative of conditions encountered in the field, the laboratory would carry out the following: ▪ Blank samples will be run in parallel with field samples to confirm there are no unacceptable instances of laboratory artefacts; ▪ Review of relative percentage differences (RPD) values for field and laboratory duplicates to provide an indication that the samples are generally homogeneous, with no unacceptable instances of significant sample matrix heterogeneities; and ▪ The appropriateness of collection methodologies, handling, storage and preservation techniques will be 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 acquired during the assessment will be evaluated as complete, upon confirmation that: ▪ Standard operating procedures (SOPs) for sampling protocols were adhered to; and ▪ Copies of all COC documentation are presented, reviewed and found to be properly completed. It can therefore be considered whether the proportion of "useable data" generated in the data collection activities is sufficient for the purposes of the land use assessment.
Comparability – The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event	Given that a reported data set can comprise several data sets from separate sampling episodes, issues of comparability between data sets are reduced through adherence to SOPs and regulator-endorsed or published guidelines and standards on each data gathering activity. In addition the data will be collected by experienced samplers and NATA-accredited laboratory methodologies will be employed in all laboratory testing programs.

6. METHODOLOGY

6.1 Sampling Rationale

With reference to the CSM described in **Section 4**, soil investigation works were planned in accordance with the following rationale:

- Sampling fill and natural soils from one-hundred and ten (110) test bore locations located across accessible areas of the site to characterise in-situ soils;
- Laboratory analysis of representative soil samples for the identified COPCs.

6.2 Assessment Criteria

For the purposes of this investigation, the adopted soil assessment criteria are referred to as the Soil Investigation Levels (SILs). SILs are presented alongside the analytical results in the corresponding summary tables, which are discussed in **Section 8**. The soil assessment criteria proposed for this project are outlined in **Table 6-1**. These 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 various parts of the site, the likely exposure pathways and the identified potential receptors.

Table 6-1 Adopted Investigation Levels for Soil

Adopted Guidelines	Rationale
NEPM, 2013 Soil HILs, HSLs, EILs. ESLs & Management Limits for TPHs	**Soil Health-based Investigation Levels (HILs)** All soil samples will be assessed against the NEPM 2013 HIL-A thresholds for residential with gardens/accessible soils. **Soil Health-based Screening Levels (HSLs)** The NEPM 2013 HSL-A&B thresholds for residential sites for vapour intrusion would be applied to assess for potential human health impacts from residual vapours resulting from petroleum, BTEX, & naphthalene. Soils asbestos results to be assessed against the NEPM 2013 Soil HSL thresholds for “all forms of asbestos”. **Ecological Investigation Levels (EILs)** Soil samples also to be assessed against the NEPM 2013 EILs for arsenic, copper, chromium (III), nickel, lead, zinc, DDT, and naphthalene; which have been derived for protection of terrestrial ecosystems. **Ecological Screening Levels (ESLs)** Soil samples to be assessed against the NEPM 2013 ESLs for selected petroleum hydrocarbons & TRH fractions for protection of terrestrial ecosystems. **Management Limits for Petroleum Hydrocarbons** Should the HSLs be exceeded for petroleum hydrocarbons, soil samples would also assessed against the NEPM 2013 *Management Limits* for the TRH fractions F1 – F4 to assess propensity for phase-separated hydrocarbons (PSH), fire and explosive hazards & adverse effects on buried infrastructure.

Note 1 Ecological values were derived using analysis of physiochemical properties of selected samples.

6.3 Soil Investigation

Soil investigation works conducted at the site are described in **Table 6-2**. Test bore locations are illustrated in **Figure A.2** and **A.3**.

Table 6-2 Summary of Soil Investigation Methodology

Activity/Item	Details
Fieldwork	An intrusive investigation for soil sampling and analysis was conducted over two days, 24-25 July 2019.
Drilling Method & Investigation Depth	Test bores were drilled using a ute-mounted drill rig, fitted with solid flight augers. Borehole details are presented in the detailed logs attached in **Appendix G**.
Soil Logging	Drilled soils were classified in the field with respect to lithological characteristics and evaluated on a qualitative basis for odour and visual signs of contamination. Soil classifications and descriptions were based on Unified Soil Classification System (USCS) and Australian Standard (AS) 4482.1-2005. Bore logs are presented in **Appendix G.**
Decontamination Procedures	Soil samples were collected using grab/dry methods and placed into laboratory-supplied, acid-washed, solvent-rinsed glass jars using dedicated nitrile gloves. Blind field duplicates were separated from the primary samples and placed into glass jars. A small amount of duplicate was collected from samples and placed into a zip-lock bag for Photo-ionisation Detector (PID) screening and asbestos analysis.
Sample Preservation	Samples were stored in chilled (ice brick-filled) chests, whilst on-site and in transit to the laboratory, which was performed under strict Chain-of-Custody (COC) conditions. Copies of the completed COC documentation (used to track sample movements) and laboratory Sample Receipt Advice (SRA) forms are provided in **Appendix I.**
Management of Soil Cuttings	Soil cuttings were used as backfill for completed boreholes.
Quality Control & Laboratory Analysis	A number of soil samples were submitted for analysis of previously-identified COPC by SGS Laboratories (SGS). QA/QC testing comprised intra-laboratory duplicates ('field duplicates') tested blind by SGS and an inter-laboratory field duplicate tested blind by Envirolab Services (Envirolab). All samples were transported under strict Chain-of-Custody (COC) conditions and COC certificates and laboratory sample receipt documentation were provided to EI for confirmation purposes, as discussed in **Section 7**.
Soil Vapour Screening	PID screening for potential VOCs within soil samples was completed during intrusive investigations. No hydrocarbon odours were reported during the investigation. Individual screening of samples ranged from 0.1– 0.9 ppm.

7. DATA QUALITY ASSESSMENT

The assessment of data quality is defined as the scientific and statistical evaluation of environmental data to determine if the data meets the objectives for the project (US EPA, 2006). Data quality assessment included an evaluation of the compliance of the field sampling, field and laboratory duplicates and laboratory analytical procedures and an assessment of the accuracy and precision of these data from the laboratory quality control measurements. The findings of the data quality assessment in relation to the current investigation at the site are discussed in detail in **Appendix K**.

The QC measures generated from the field sampling and laboratory analytical program are summarised in **Table 7-1**.

Table 7-1 Quality Control Process

Data Quality	Control	Conformance [Yes, Part, No]	Report Sections
Preliminaries	Data Quality Objectives established	Yes	See **Section 5**
Field work	Suitable documentation of fieldwork observations including borehole logs, field notes.	Yes	See **Section 2.4** and **Appendix G**
Sampling Plan	Use of relevant and appropriate sampling plan (density, type, and location)	Yes	See sample rationale
	All media sampled and duplicates collected	Yes	See **Table B.1** and **Appendix K**
	Use of approved and appropriate sampling methods (soil, groundwater, soil vapour)	Yes	See **Section 6**
	Selection of soil samples according to field PID readings (where VOCs are present)	Yes	See **Section 6**
	Preservation and storage of samples upon collection and during transport to the laboratory	Yes	See **Section 6**
	Appropriate Rinsate, Field and Trip Blanks taken	Yes	See **Appendix K**
	Completed field and analytical laboratory sample COC procedures and documentation	Yes	See **Appendix I** and **Appendix J**
Laboratory	Sample holding times within acceptable limits	Part	See **Appendix K** and **Appendix L**
	Use of appropriate analytical procedures and NATA-accredited laboratories	Yes	See **Appendix K** and **Appendix L**
	LOR/PQL low enough to meet adopted criteria	Yes	See **Appendix K** and **Appendix L**
	Laboratory blanks	Yes	See **Appendix K** and **Appendix L**
	Laboratory duplicates	Yes	See **Appendix K** and **Appendix L**

Data Quality	Control	Conformance [Yes, Part, No]	Report Sections
	Matrix spike/matrix spike duplicates (MS/MSDs)	Part	See **Appendix K** and **Appendix L**
	Surrogates (or System Monitoring Compounds)	Yes	See **Appendix K** and **Appendix L**
	Analytical results for replicated samples, including field and laboratory duplicates and inter-laboratory duplicates, expressed as Relative Percentage Difference (RPD)	Yes	See **Appendix K** and **Appendix L**
	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 **Appendix E** and **Appendix J**
Reporting	Report reviewed by senior staff to assess project meets desired quality, EPA guidelines and project outcomes.	Yes	See Report Distribution page at front of report.

7.1 Quality Overview

On the basis of the field and analytical data validation procedure employed, the overall quality of the analytical data produced for the site was considered to be of an acceptable standard for interpretive use and preparation of a conceptual site model (CSM).

8. RESULTS

8.1 Soil Investigation Results

8.1.1 Site Geology and Sub-surface Conditions

The general site geology encountered during the drilling of the soil investigation boreholes may be described as a layer of topsoil, overlying residual and alluvial clays, followed by weathered shale bedrock. Fill materials were also identified overlying residual/alluvial clays in some boreholes (e.g. underneath dirt roads). The geological information obtained during the investigation is summarised in **Table 8-1** and borehole logs from these works are presented in **Appendix G**.

Table 8-1 Generalised Sub-surface Profile

Layer	Description	Minimum & maximum depth of layer (mBGL)
Topsoil	Sandy SILT	0.0 – 0.9
Fill (Borehole locations 22, 23, 24, 25, 50, 59, 60, 64, 96, 103, 104, 105, and 110).	Silty/Gravelly SAND	0.0 – 0.5
	SILT	0.0 – 0.6
	Silty CLAY	0.0 – 0.2
Residual Soil	Silty CLAY	0.2 – 1.5
	Sandy CLAY	2.5 – 5.0 +
Bedrock	SHALE	1.4 – 4.6 +

Note 1 **+** Denotes the material was detected at the termination depth.

8.1.2 Field Observations

Soil samples were obtained from bores at various depths ranging between 0.1 mBGL to 4.6 mBGL. All examined soil samples 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) and the following observations were noted:

- Some sub-angular to angular gravels were reported within fill materials;
- No olfactory odours were observed during the investigation;
- Evidence of ash or slag materials was not observed in any boreholes; and
- Photo-ionisation Detector (PID) analysis of soil samples ranged between 0.1 – 0.9 ppm.

8.2 Laboratory Analytical Results

8.2.1 Soil Analytical Results

A summary of laboratory results showing test sample quantities, minimum/maximum analyte concentrations and samples found to exceed the SILs, is presented in **Table 8-2.** More detailed tabulations of results showing the tested concentrations for individual samples alongside the adopted soil criteria are presented in **Appendix B, Table B.2** at the end of this report.

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Completed documentation used to track soil sample movements and laboratory receipt (i.e. COC and SRA forms) are copied in **Appendix I** and all laboratory analytical reports for tested soil samples are presented in **Appendix J**.

Table 8-2 Summary of Individual Soil Analytical Results

No. of primary samples	Analyte	Min Conc. (mg/kg)	Max Conc. (mg/kg)	Samples exceeding investigation levels
Heavy Metals				
36	Arsenic	1	11	None
36	Cadmium	<0.3	<0.4	None
36	Chromium (Total)	1.8	37	None
36	Copper	1	51	None
36	Lead	4	130	None
36	Mercury	<0.05	0.05	None
36	Nickel	<0.5	24	None
36	Zinc	12	8100	**HIL & EIL** BH22_0.1-0.2 (8100 mg/kg) **EIL** BH1_0.1-0.2 (130 mg/kg) BH15_0.1-0.2 (210 mg/kg) BH21_0.6-0.7 (160 mg/kg) BH62_0.1-0.2 (1200 mg/kg) BH110_0.1-0.2 (2700 mg/kg)
PAHs				
26	Naphthalene	<0.1	<0.1	None
26	Benzo(a)pyrene	<0.1	1	None
26	Carcinogenic PAHs (as B(a)P TEQ)	<0.3	1.4	None
26	Total PAH	<0.8	9.3	None
BTEX				
36	Benzene	<0.1	<0.1	None
36	Toluene	<0.1	<0.1	None
36	Ethyl benzene	<0.1	<0.1	None
36	Xylenes (Total)	<0.3	<0.3	None

No. of primary samples	Analyte	Min Conc. (mg/kg)	Max Conc. (mg/kg)	Samples exceeding investigation levels
TRHs				
36	F1 [1]	<25	<25	None
36	F2 [2]	<25	<25	None
36	F3 [3]	<90	<90	None
36	F4 [4]	<120	<120	None
Pesticides				
26	OCPs	<1	<1	None
26	OPPs	<1.7	<1.7	None
PCBs				
26	Total PCBs	<1	<1	None
Herbicides				
9	245-T	<0.5	<0.5	None
9	2,4-D	<0.5	<0.5	None
9	MCPA	<0.5	<0.5	None
9	Pilcoram	<0.5	<0.5	None
Physicochemical Properties				
10	pH	4.8	7.4	None
10	CEC	3.5	27	None
Asbestos				
26	Asbestos	No asbestos detected	Asbestos detected	**HSL** ASB 1

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}).

8.2.2 Composite Analytical Results

Composite samples were analysed for heavy metals and pesticides, with a summary of laboratory results showing test sample quantities, maximum analyte concentrations and samples found to exceed the SILs presented in **Table 8-3**.

More detailed tabulations of results showing the tested concentrations for composite samples alongside the adopted criteria are presented in **Appendix B**, **Table B.3**. Completed documentation used to track sample movements and laboratory receipt (i.e. COC and SRA forms) are copied in **Appendix I** and all laboratory analytical reports for tested composite samples are presented in **Appendix J**.

Table 8-3 Summary of Composite Soil Analytical Results

No. of primary samples	Analyte	Min Conc. (µg/L)	Max Conc. (µg/L)	Samples exceeding investigation levels
Heavy Metals				
28	Arsenic	3	11	None
28	Cadmium	<0.3	<0.3	None
28	Chromium (Total)	7.4	30	None
28	Copper	6.9	23	None
28	Lead	10	30	None
28	Mercury	<0.05	<0.05	None
28	Nickel	3.7	8.3	None
28	Zinc	9.7	230	**EIL** C1 (41 mg/kg) C2 (34 mg/kg) C3 (37 mg/kg) C4 (32 mg/kg) C5 (38 mg/kg) C6 (36 mg/kg) C7 (49 mg/kg) C8 (36 mg/kg) C9 (32 mg/kg) C10 (26 mg/kg) C11 (38 mg/kg) C12 (52 mg/kg) C13 (53 mg/kg) C14 (230 mg/kg) C15 (27 mg/kg) C16 (35 mg/kg) C17 (29 mg/kg) C18 (31 mg/kg) C19 (28 mg/kg) C21 (28 mg/kg) C23 (25 mg/kg) C24 (23 mg/kg) C25 (42 mg/kg) C29 (31 mg/kg)
Pesticides				
28	OCPs	<1	<1	None
28	OPPs	<1.7	<1.7	None

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9. SITE CHARACTERISATION

9.1 Review of Conceptual Site Model

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-site and off-site receptors.

Previously known data gaps, as outlined in **Section 4.6** have largely been addressed. However, the following remaining data gaps will need to be addressed in subsequent investigation works:

- The quality of soils within former creek alignment/excavated areas in the western portion of the site.

9.2 Soil Characterisation

With reference to **Tables 8-2**, **8-3** and **Tables B.2** and **B-3**, individual and composite concentrations of PAH, TRH, BTEX, pesticides, and PCBs were all reported below the adopted criteria. Concentrations of heavy metals were also reported below the adopted human health criteria, with the exception of zinc within shallow topsoil/fill sample BH22_0.1-0.2. Concentrations of heavy metals were also reported below the adopted ecological criteria, with the exception of individual concentrations of zinc within shallow topsoil/fill at BH1_0.1-0.2 (130 mg/kg), BH15_0.1-0.2 (210 mg/kg), BH21_0.6-0.7 (160 mg/kg), BH62_0.1-0.2 (1200 mg/kg), BH110_0.1-0.2 (2700 mg/kg). In addition the majority of the composite samples exceeded the ecological criteria for zinc.

Areas in the western portion of the site, within former creek alignments, may have been backfilled with uncontrolled filling or waste. Additional works during subsequent remediation and/or investigation will need to be conducted to confirm the quality of soils and delineate potential contamination.

9.3 Asbestos Risk

Asbestos was not identified during intrusive sampling at one-hundred and ten borehole locations. Analysis of surface fragments however, identified the presence of asbestos cement sheeting located in the central portion of the site.

The uncontrolled backfilling of former creek alignments or excavated areas in the western portion of the site, highlight additional areas for asbestos materials to potentially be located. Additional works will be required to confirm the quality of soils and delineate potential contamination.

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10. CONCLUSIONS

The site located at 859 Mamre Road, Kemps Creek NSW was the subject of a Detailed Site Investigation (DSI) that was conducted in order to assess the nature and degree of on-site contamination associated with current and former uses of the property. Based on the findings of this assessment it was concluded that:

Objectives

The main objectives of the assessment were to:

- Evaluate the potential for site contamination on the basis of historical land uses, anecdotal and documentary evidence of possible pollutant sources;
- To investigate the degree of any potential contamination by means of intrusive sampling and laboratory analysis, for relevant contaminants of concern; and
- Where site contamination is confirmed, provide data to assist in the selection and design of appropriate remedial options.

Findings

- Based on historical information, the site was vacant/grazing land up until the 1990s when a low density residential dwelling was established fronting Mamre Road. The use of the site for agricultural purposes, including a market garden appear to have been periodical since the 1990s. Storage of chemicals for agricultural use was noted during a site walkover;
- A SafeWork NSW search did not identify any underground storage tanks (USTs) or the storage of hazardous chemicals at the site;
- Penrith City Council records indicated that they were unable to locate any documents other than a Building Application relating to the existing dwelling;
- The site was free of statutory notices issued by the EPA, and was not recorded on the list of NSW Contaminated Sites Notified to the EPA/POEO public register;
- Soil sampling and analysis was conducted at one-hundred and ten (110) test bore locations:
  - The sub-surface layers comprised a layer of topsoil and/or fill overlying residual and alluvial clays, followed by weathered shale bedrock;
  - An assessment against the NEPM (2013) HIL-A/HSL-A investigation levels did not indicate soil samples (composite or individual) exceeding adopted criteria, with the exception of zinc in BH22_0.1-0.2.
  - An assessment against the NEPM (2013) and site specific EIL/ESL investigation levels did not indicate soil samples (composite or individual) exceeding adopted criteria, with the exception of zinc within shallow topsoil/fill at BH1_0.1-0.2 (130 mg/kg), BH15_0.1-0.2 (210 mg/kg), BH21_0.6-0.7 (160 mg/kg), BH62_0.1-0.2 (1200 mg/kg), BH110_0.1-0.2 (2700 mg/kg). In addition the majority of the composite samples exceeded the adjusted ecological criteria for zinc.
- Asbestos was not identified during intrusive sampling; however surface cement-fibre sheeting fragments were reported to contain asbestos in the central portion of the site.

- Areas in the western portion of the site within former creek alignments may have been excavated and backfilled with uncontrolled fill, and the condition of this area remains unresolved.

Conclusions

Based on the findings of this investigation and with consideration of the Statement of Limitations (**Section 12**), EI conclude contamination was identified during this investigation. Areas of human health / ecological risks and locations with surface asbestos cement sheeting fragments were noted at the site, along with the possibility of uncontrolled filling in the western portion of the site.

EI conclude that the site can be made suitable for future site redevelopment (including the most sensitive land use – residential with garden/accessible soils), so long as recommendations detailed in **Section 11** are implemented.

11. RECOMMENDATIONS

Based on the findings of this DSI, the following recommendations will be required to be implemented before the site can be confirmed as suitable for future site redevelopment (including the most sensitive land use – residential with garden/accessible soils):

- A Remediation Action Plan (RAP) should be prepared prior to the commencement of any remediation works. The RAP will provide details of the methodology and procedures required for effective site remediation, including:
  - Sampling Analysis and Quality Plan (SAQP) for the validation and remediation activities performed on-site;
  - Design of supplementary investigations to close the data gaps identified during this investigation (**Section 9.1**);
  - Waste classification assessment, in order to enable classification of any surplus site soils to be excavated and disposed off-site during remediation works and material imported to the site, in accordance with the NSW EPA (2014) *Waste Classification Guidelines and Waste Regulations;*
  - Work health and safety considerations, and
  - Contingency plan to address unexpected finds.
- Preparation of a final site validation report by a suitably qualified environmental consultant, certifying the site suitability of soils for the future intended land use (including the most sensitive land use – residential with garden/accessible soils).

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12. STATEMENT OF LIMITATIONS

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 investigation program.

While normal assessments of data reliability have been made, EI assumes no responsibility or liability for errors in any data obtained from previous assessments conducted on site, regulatory agencies (e.g. Council, 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 investigations and assessment.

EI's assessment is necessarily based upon the result of the site investigation and the restricted program of surface and subsurface sampling, screening and chemical testing which was set out in the 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 the use of Malosi Group, 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.

REFERENCES

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ABBREVIATIONS

ABC	Ambient Background Concentration
ACL	Added Contaminant Limit
ACM	Asbestos-containing materials
AS	Australian Standard
ASS	Acid sulfate soils
B(a)P	Benzo(a)Pyrene (a PAH compound), - B(a)P TEQ Toxicity Equivalent Quotient
BH	Borehole
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
CBD	Central Business District
CEC	Cation Exchange Capcity
CLM	Contaminated Land Management
CSM	Conceptual Site Model
COC	Chain of Custody
COPC	Contaminants of Potential Concern
DA	Development Application
DBYD	Dial before you dig
DEC	Department of Environment and Conservation, NSW (see OEH)
DECC	Department of Environment and Climate Change, NSW (see OEH)
DECCW	Department of Environment, Climate Change and Water, NSW (see OEH)
DA	Development Application
DP	Deposited Plan
DSI	Detailed Site Investigation
EIL	Ecological Investigation Level
EPA	Environment Protection Authority
ESL	Ecological Screening Level
F1	TRH C_6 – C_{10} less sum of BTEX concentrations (Ref. NEPM 2013, Schedule B1)
F2	TRH >C_{10} – C_{16} less naphthalene (Ref. NEPM 2013, Schedule B1)
F3	TRH >C_{16} – C_{34} (Ref. NEPM 2013, Schedule B1)
F4	TRH >C_{34} – C_{40} (Ref. NEPM 2013, Schedule B1)
HIL	Health-based Investigation Level
HSL	Health-based Screening Level
km	Kilometres
LOR	Limit Of Reporting of laboratory instruments (see PQL)
m	Metres
mAHD	Metres Australian Height Datum
mBGL	Metres Below Ground Level
mg/L	Milligrams per litre
µg/L	Micrograms per litre
NATA	National Association of Testing Authorities, Australia
NEPC	National Environmental Protection Council
NEPM	National Environmental Protection Measure
NSW	New South Wales
OCP	Organochlorine pesticides
OPP	Organophosphorus pesticides
OEH	Office of Environment and Heritage, NSW (formerly DEC, DECC, DECCW)
PAHs	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PFAS	Per or Poly-Fluoroalkyl Substances
PID	Photo-ionisation Detector
pH	Measure of the acidity or basicity of an aqueous solution

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PQL	Practical Quantitation Limit (limit of detection for laboratory instruments)
QA/QC	Quality Assurance / Quality Control
RAP	Remediation Action Plan
SIL	Soil Investigation Level
SRA	Sample receipt advice (document confirming laboratory receipt of samples)
SWL	Standing Water Level
TPH	Total Petroleum Hydrocarbons (superseded term equivalent to TRH)
TRH	Total Recoverable Hydrocarbons (non-specific analysis of organic compounds)
UCL	Upper Confidence Limit of the mean
UPSS	Underground Petroleum Storage System
US EPA	United States Environmental Protection Agency
UST	Underground Storage Tank

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Appendix A - Figures

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Drawn:	L.C.
Approved:	J.H.
Date:	09-07-19
Scale:	Not To Scale

Detailed Site Investigation
859 Mamre Road, Kemps Creek, NSW

Site Locality Plan

Figure:
A.1

Project: E24287 E02_Rev0



LEGEND

– — – Approximate site boundary

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Detailed Site Investigation
859 Mamre Road, Kemps Creek, NSW

Site Layout Plan

Figure:
A.2

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LEGEND

- Approximate site boundary
- Approximate borehole location

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Detailed Site Investigation
859 Mamre Road, Kemps Creek, NSW

Sampling Location Plan (North-East part of site)

Figure: A.3

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LEGEND

- Approximate site boundary
- Approximate borehole location

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Detailed Site Investigation
859 Mamre Road, Kemps Creek, NSW

Sampling Location Plan (South-West part of site)

Figure: A.4

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Appendix B - Tables

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Table B.1 - Sample Register for 859 Mamre Road, Kemps Creek NSW

Sample ID	Date	PID	Scheduled Analysis #									Primary Laboratory	Secondary Laboratory
			Heavy Metals	TRH	BTEX	PAH	OCP / OPP	PCB	pH / CEC	Herbicides	Asbestos	SGS Batch No.	Envirolab Batch No.
Detailed Site Investigation - EI, 2019													
Soils													
BH1_0.1-0.2		0.1	X	X	X	X	X	X			X		
BH1_0.7-0.8		0.3	X	X	X	X							
BH7_0.1-0.2		0.1	X	X	X	X	X	X			X		
BH8_0.1-0.2		0.1	X	X	X	X	X	X			X		
BH10_0.1-0.2		0.1							X				
BH10_1.0-1.1		-							X				
BH14_0.1-0.2		0.3	X	X	X	X	X	X			X		
BH15_0.1-0.2		0.3	X	X	X	X	X	X			X		
BH17_0.1-0.2		0.1	X	X	X	X	X	X			X		
BH19_0.1-0.2		0.1	X	X	X	X	X	X			X		
BH20_0.1-0.2		0.3	X	X	X	X	X	X			X		
BH21_0.1-0.2		0.4	X	X	X	X	X	X			X		
BH21_0.6-0.7		0.7	X	X	X	X							
BH22_0.1-0.2		0.5	X	X	X	X	X	X			X		
BH23_0.1-0.2		0.4	X	X	X	X	X	X		X	X		
BH24_0.1-0.2		0.3	X	X	X	X	X	X			X		
BH27_0.1-0.2		0.1	X	X	X	X	X	X			X		
BH29_0.4-0.5		0.9	X	X	X	X							
BH30_0.1-0.2	24/07/2019	-	X	X	X	X	X	X			X		
BH32_0.1-0.2		-								X			
BH34_0.1-0.2		-								X			
BH37_0.1-0.2		-								X			
BH39_0.1-0.2		-								X			
BH45_0.1-0.2		0.1	X	X	X	X	X	X			X		
BH45_0.3-0.4		0.2	X	X	X	X							
BH47_0.1-0.2		0.2	X	X	X	X	X	X			X		
BH50_0.1-0.2		0.1	X	X	X	X	X	X			X		
BH52_0.1-0.2		0.1								X			
BH56_0.1-0.2		0.1								X			
BH57_0.1-0.2		0.2	X	X	X	X	X	X			X		
BH58_0.1-0.2		0.3	X	X	X	X	X	X			X		
BH58_0.4-0.5		0.2	X	X	X	X							
BH59_0.1-0.2		0.3	X	X	X	X	X	X			X		
BH62_0.1-0.2		0.1	X	X	X	X	X	X			X		
BH69_0.1-0.2		0.4								X			
BH71_0.1-0.2		0.5								X			
BH72_0.5-0.6		0.1	X	X	X	X							
BH82_0.4-0.5		0.2	X	X	X	X							
BH90_0.1-0.2		0.3	X	X	X	X	X	X			X		
BH91_0.1-0.2		0.2	X	X	X	X	X	X			X		
BH95_0.1-0.2		0.2							X				-
BH95_0.5-0.6		0.4							X			SE195772	
BH95_3.8-3.9		0.4							X				
BH101_0.7-0.8		0.4	X	X	X	X							
BH103_0.1-0.2	25/07/2019	0.2	X	X	X	X	X	X			X		
BH105_0.1-0.2		0.2							X				
BH105_0.5-0.6		0.4							X				
BH105_4.0-4.1		0.4							X				
BH107_0.1-0.2		0.5	X	X	X	X	X	X			X		
BH108_0.6-0.7		0.3	X	X	X	X							
BH110_0.1-0.2		0.3	X	X	X	X	X	X			X		
BH110_0.6-0.7		0.4	X	X	X	X							
ASB 1	24/07/2019	-									X		
C1		-	X				X						
C2		-	X				X						
C3		-	X				X						
C4		-	X				X						
C5		-	X				X						
C6		-	X				X						
C7		-	X				X						
C8	24/07/2019	-	X				X						
C9		-	X				X						
C10		-	X				X						
C11		-	X				X						
C12		-	X				X						
C13		-	X				X						
C14		-	X				X						
C15		-	X				X						
C16		-	X				X						
C17		-	X				X						
C18		-	X				X						
C19		-	X				X						
C20		-	X				X						
C21		-	X				X						
C23	25/07/2019	-	X				X						
C24		-	X				X						
C25		-	X				X						
C26		-	X				X						
C27		-	X				X						
C28		-	X				X						
C29		-	X				X						
QD1/QT1	24/07/2019	-	X	X	X								222514
QD2/QT2	25/07/2019	-	X	X	X								

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Table B.2 – Summary of Soil Investigation Results for 859 Mamre Road, Kemps Creek NSW **E24287.E02**

Sample ID	Material	Sampling Date	Heavy Metals								PAHs				BTEX				TRHs				OCPs	OPPs	Total PCBs	Herbicides				Physicochemical Parameters		Asbestos
			As	Cd	Cr#	Cu	Pb	Hg	Ni	Zn	Carcinogenic PAHs (as BaP TEQ)	Benzo(a)pyrene	Total PAHs	Naphthalene	Benzene	Toluene	Ethylbenzene	Total Xylenes	F1	F2	F3	F4				2,4,5-T	2,4-D	MCPA	Picloram	pH	CEC	
BH1_0.1-0.2	Topsoil		7	<0.3	14	37	82	0.05	12	130	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH1_0.7-0.8	Natural		8	<0.3	16	18	18	<0.05	3.8	26	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH7_0.1-0.2	Topsoil		10	<0.3	16	13	21	<0.05	6.1	23	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH8_0.1-0.2	Topsoil		10	<0.3	17	21	24	<0.05	6.5	37	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH10_0.1-0.2	Fill		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	4.8	15	N.A.
BH10_1.0-1.1	Natural		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	5	27	N.A.
BH14_0.1-0.2	Topsoil		9	<0.3	20	16	24	<0.05	4.9	55	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH15_0.1-0.2	Topsoil		11	<0.3	14	51	42	<0.05	5.3	210	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH17_0.1-0.2	Topsoil		9	<0.3	22	11	24	<0.05	5.2	86	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH19_0.1-0.2	Topsoil		8	<0.3	21	16	20	<0.05	5.2	43	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH20_0.1-0.2	Topsoil		10	<0.3	19	19	24	<0.05	5.6	68	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH21_0.1-0.2	Topsoil		10	<0.3	14	12	26	<0.05	5.4	160	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH21_0.6-0.7	Natural		7	<0.3	13	22	14	<0.05	6.1	29	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH22_0.1-0.2	Fill		4	1.4	37	51	130	<0.05	24	8100	1.4	1	9.3	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH23_0.1-0.2	Fill		8	<0.3	12	9.3	20	<0.05	3.5	39	0.7	0.5	3.9	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	<0.5	<0.5	<0.5	<0.5	N.A.	N.A.	No
BH24_0.1-0.2	Fill		7	<0.3	13	8.8	21	<0.05	4.6	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	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH27_0.1-0.2	Topsoil		9	<0.3	19	14	19	<0.05	3.7	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	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH29_0.4-0.5	Topsoil		9	<0.3	19	24	19	<0.05	7.1	24	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH30_0.1-0.2	Topsoil	24/07/2019	8	<0.3	28	16	23	<0.05	4	42	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH32_0.1-0.2	Topsoil		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<0.5	<0.5	<0.5	<0.5	N.A.	N.A.	N.A.
BH34_0.1-0.2	Topsoil		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<0.5	<0.5	<0.5	<0.5	N.A.	N.A.	N.A.
BH37_0.1-0.2	Topsoil		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<0.5	<0.5	<0.5	<0.5	N.A.	N.A.	N.A.
BH39_0.1-0.2	Topsoil		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<0.5	<0.5	<0.5	<0.5	N.A.	N.A.	N.A.
BH45_0.1-0.2	Topsoil		10	<0.3	29	13	26	<0.05	3.5	40	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH45_0.3-0.4	Natural		8	<0.3	17	15	15	<0.05	3.5	17	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH47_0.1-0.2	Topsoil		11	<0.3	21	15	30	<0.05	6.3	38	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH50_0.1-0.2	Fill		8	<0.3	18	12	22	<0.05	5.3	38	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH52_0.1-0.2	Topsoil		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<0.5	<0.5	<0.5	<0.5	N.A.	N.A.	N.A.
BH56_0.1-0.2	Topsoil		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<0.5	<0.5	<0.5	<0.5	N.A.	N.A.	N.A.
BH57_0.1-0.2	Topsoil		9	<0.3	16	21	20	<0.05	6.1	30	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH58_0.1-0.2	Topsoil		8	<0.3	16	22	21	<0.05	6.2	52	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH58_0.4-0.5	Natural		7	<0.3	15	16	11	<0.05	5.1	12	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH59_0.1-0.2	Fill		1	<0.3	1.8	1	4	<0.05	<0.5	54	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH62_0.1-0.2	Topsoil		6	<0.3	21	22	53	<0.05	23	1200	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH69_0.1-0.2	Topsoil		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<0.5	<0.5	<0.5	<0.5	N.A.	N.A.	N.A.
BH71_0.1-0.2	Topsoil		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<0.5	<0.5	<0.5	<0.5	N.A.	N.A.	N.A.
BH72_0.5-0.6	Natural		7	<0.3	13	13	13	<0.05	4.1	16	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH82_0.4-0.5	Natural		8	<0.3	12	18	13	<0.05	5.4	27	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH90_0.1-0.2	Topsoil		7	<0.3	18	14	21	<0.05	4.9	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	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH91_0.1-0.2	Topsoil		7	<0.3	17	19	21	<0.05	9.7	54	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH95_0.1-0.2	Topsoil		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	7.1	15	N.A.
BH95_0.5-0.6	Natural		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	7.3	19	N.A.
BH95_3.8-3.9	Natural		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	7.4	14	N.A.
BH101_0.7-0.8	Natural		5	<0.3	8.5	14	13	<0.05	8.2	22	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH103_0.1-0.2	Fill	25/07/2019	8	<0.3	8.6	18	28	<0.05	6.3	46	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH105_0.1-0.2	Topsoil		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	6.7	3.5	N.A.
BH105_0.5-0.6	Fill		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	6.9	4.4	N.A.
BH105_4.0-4.1	Natural		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<0.5	<0.5	<0.5	<0.5	7	12	N.A.
BH107_0.1-0.2	Topsoil		4	<0.3	8.3	10	11	<0.05	5.6	12	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH108_0.6-0.7	Natural		7	<0.3	19	17	33	<0.05	7	21	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH110_0.1-0.2	Fill		2	0.5	11	11	120	<0.05	3.5	2700	<0.3	0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No
BH110_0.6-0.7	Natural		6	<0.3	20	16	17	<0.05	2.7	21	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
ASB 1	Fragment	24/07/2019	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Yes
Statistical Analysis																																
Maximum Concentration			11	1.4	37	51	130	0.05	24	8100	1.4	1	9.3	0.1	0.1	0.1	0.1	0.3	25	25	90	120	1	1.7	1	0.5	0.5	0.5	0.5	7.4	27	NC
Mean			7.58	0.34	16.78	17.95	28.97	0.05	6.39	377.19	0.34	0.1	1.1	0.1	0.1	0.1	0.1	0.3	25	25	90	120	1	1.7	1	0.5	0.5	0.5	0.5	6.53	13.74	NC
SILs																																
HIL A - *Residential with garden/accessible soil*			100	20	100 Cr(VI)	6,000	300	40	400	7,400	3	NR	300										NR	NR	1	600	900	600	4,500			
HSL A - *low to high density residential*			Source depths (0 m to <1 m BGL)											5	0.7	480	NL	110	50	280											
Soil texture classification – Clay [1]			Source depths (1 m to <2 m BGL)											NL	1	NL	NL	310	90	NL											
			Source depths (2 m to < 4 m BGL)											NL	2	NL	NL	NL	150	NL											
			Source depths (4 m + BGL)											NL	3	NL	NL	NL	290	NL											
EIL/ESL - *Commercial / Industrial*			100	NR	190	90	1,100	NR	30	70	NR	33 [4]	NR	170	50	85	70	105	180	120	300	5,600	180	NR	NR							
Management Limits – Residential, parkland and public open space, Coarse grained soil texture[1]																			800	1,000	3,500	10,000										
Asbestos contamination HSL Bonded ACM (%w/w)																																<0.01
Asbestos contamination HSL Non Bonded / Friable Asbestos (%w/w)																																<0.001

Notes: All results are recorded in mg/kg, unless otherwise specified.

Highlighted value indicates concentration exceeds HIL / HSL

Highlighted value indicates concentration exceeds EIL / ESL

Highlighted value indicates concentration exceeds HIL / HSL and EIL / ESL

HIL D NEPM 2013 'HIL D' - Health Investigation Level - Commercial/Industrial land-use scenario assumes typical commercial or light industrial properties, consisting of single or multi-storey buildings usppported by ground-level slabs.

HSL D Health Screening Level

EIL Ecological Investigation Level

ESL Ecological Screening Level

Thresholds are for Chromium VI.

NR No current published criterion.

NL 'Not Limiting'

ND 'Not detected' i.e. all concentrations of the compounds within the analyte group were found to be below the laboratory limits of detection.

NA 'Not Analysed' i.e. the sample was not analysed.

1 As strata is predominantly clay, fine grained soil values were applied.

2 Ecological values relate to selected analytes of pH / CEC analysed across the site.

3 Conservative EIL value used.

4 Value derived from CRC Care Report No. 39, Table 11.

F1 TRH C_6-C_{10} less the sum concentration of BTEX.

F2 TRH $C_{>10}$-C_{16} less the concentration of Naphthalene.

F3 TRH $C_{>16}$-C_{34}

F4 TRH $C_{>34}$-C_{40}

eiaustralia

Table B.3 – Summary of Composite Soil Investigation Results for 859 Mamre Road, Kemps Creek NSW

Sample ID		Sampling Depth (@ m BGL)	Material	Sampling Date	Heavy Metals								Organochlorine Pesticides (OCPs)	Organophosphate Pesticides (OPPs)
					Arsenic	Cadmium	Chromium#	Copper	Lead	Mercury	Nickel	Zinc		
C1	BH2	0.1-0.4	Topsoil	24/07/2019	7	<0.3	14	18	20	<0.05	8.3	41	<1	<1.7
	BH3													
	BH4													
C2	BH5	0.1-0.2	Topsoil / Fill	24/07/2019	9	<0.3	19	14	26	<0.05	5.3	34	<1	<1.7
	BH6													
	BH13													
C3	BH9	0.1-0.2	Topsoil	24/07/2019	9	<0.3	15	17	18	<0.05	7.8	37	<1	<1.7
	BH10													
	BH12													
C4	BH11	0.1-0.2	Topsoil	24/07/2019	11	<0.3	21	12	26	<0.05	5.1	32	<1	<1.7
	BH16													
	BH18													
C5	BH31	0.1-0.2	Topsoil	24/07/2019	8	<0.3	24	20	22	<0.05	3.9	38	<1	<1.7
	BH39													
	BH40													
C6	BH32	0.1-0.2	Topsoil	24/07/2019	10	<0.3	18	18	21	<0.05	3.9	36	<1	<1.7
	BH33													
	BH34													
C7	BH30	0.1-0.2	Topsoil	24/07/2019	11	<0.3	20	23	24	<0.05	4.6	49	<1	<1.7
	BH38													
	BH41													
C8	BH37	0.1-0.2	Topsoil	24/07/2019	11	<0.3	22	22	30	<0.05	3.9	38	<1	<1.7
	BH42													
	BH43													
C9	BH28	0.1-0.2	Topsoil	24/07/2019	9	<0.3	22	15	20	<0.05	3.7	32	<1	<1.7
	BH35													
	BH36													
C10	BH25	0.1-0.2	Topsoil / Fill	24/07/2019	7	<0.3	17	13	19	<0.05	4.5	26	<1	<1.7
	BH26													
	BH44													
C11	BH48	0.1-0.2	Topsoil	24/07/2019	9	<0.3	22	17	25	<0.05	5.3	38	<1	<1.7
	BH49													
	BH51													
C12	BH46	0.1-0.2	Topsoil	24/07/2019	9	<0.3	19	19	22	<0.05	5.5	52	<1	<1.7
	BH54													
	BH55													
C13	BH52	0.1-0.2	Topsoil	24/07/2019	9	<0.3	21	18	22	<0.05	5.7	53	<1	<1.7
	BH53													
	BH56													
C14	BH60	0.1-0.2	Topsoil / Fill	24/07/2019	8	<0.3	18	11	21	<0.05	5.2	230	<1	<1.7
	BH67													
	BH68													
C15	BH65	0.1-0.2	Topsoil	24/07/2019	10	<0.3	21	12	24	<0.05	5.7	27	<1	<1.7
	BH66													
	BH72													
C16	BH69	0.1-0.2	Topsoil	25/07/2019	8	<0.3	19	15	19	<0.05	5.1	35	<1	<1.7
	BH70													
	BH71													
C17	BH73	0.1-0.2	Topsoil	25/07/2019	10	<0.3	30	18	24	<0.05	4.9	29	<1	<1.7
	BH74													
	BH75													
C18	BH76	0.1-0.2	Topsoil	25/07/2019	8	<0.3	20	15	23	<0.05	5	31	<1	<1.7
	BH77													
	BH78													
C19	BH79	0.1-0.2	Topsoil	25/07/2019	10	<0.3	24	17	21	<0.05	4.1	28	<1	<1.7
	BH80													
	BH81													
C20	BH82	0.1-0.2	Topsoil	25/07/2019	7	<0.3	24	11	21	<0.05	4.3	22	<1	<1.7
	BH83													
	BH84													
C21	BH85	0.1-0.2	Topsoil	25/07/2019	7	<0.3	18	13	19	<0.05	5	28	<1	<1.7
	BH86													
	BH87													
C23	BH88	0.1-0.2	Topsoil / Fill	25/07/2019	8	<0.3	22	9.9	20	<0.05	4	25	<1	<1.7
	BH96													
	BH97													
C24	BH89	0.1-0.2	Topsoil	25/07/2019	7	<0.3	18	9.9	24	<0.05	5.7	23	<1	<1.7
	BH95													
	BH98													
C25	BH93	0.1-0.2	Topsoil	25/07/2019	6	<0.3	12	23	14	<0.05	5.2	42	<1	<1.7
	BH94													
	BH109													
C26	BH92	0.1-0.2	Topsoil	25/07/2019	7	<0.3	23	9.7	20	<0.05	4	23	<1	<1.7
	BH99													
	BH100													
C27	BH101	0.1-0.2	Topsoil / Fill	25/07/2019	4	<0.3	7.4	9.3	12	<0.05	5.6	16	<1	<1.7
	BH102													
	BH104													
C28	BH105	0.1-0.2	Topsoil	25/07/2019	3	<0.3	9.9	6.9	10	<0.05	4.2	9.7	<1	<1.7
	BH106													
	BH107													
C29	BH61	0.1-0.2	Topsoil / Fill	25/07/2019	5	<0.3	12	13	20	<0.05	8.2	31	<1	<1.7
	BH63													
	BH64													
Statistical Analysis														
Maximum Concentration					11	0.3	30	23	30	0.05	8.3	230	1	1.7
Mean					8.11	0.3	19.01	14.99	20.96	0.05	5.13	39.49	1	1.7
SILs														
HIL A - *Residential with garden/accessible soil*					33	6.7	33.3 Cr(VI)	2,000	100	133	133	2,467	NR	NR
EILs / ESLs - *Urban Residential*[1]					33	NR	63	30	367	NR	13	23	NR	NR

Notes: All results are recorded in mg/kg, unless otherwise specified.

Highlighted value indicates concentration exceeds HIL / HSL

Highlighted value indicates concentration exceeds EIL / ESL

Highlighted value indicates concentration exceeds HIL / HSL and EIL / ESL

HIL	NEPM 2013 'HIL A" - Health Investigation Level - residential land-use scenario.
HSL D	Health Screening Level
EIL	Ecological Investigation Level
ESL	Ecological Screening Level
#	Thresholds are for Chromium VI.
NR	No current published criterion.
NL	'Not Limiting'
ND	'Not detected' i.e. all concentrations of the compounds within the analyte group were found to be below the laboratory limits of detection.
NA	'Not Analysed' i.e. the sample was not analysed.
1	Ecological values relate to selected analytes of pH / CEC analysed across the site.
2	Conservative EIL value used.

Appendix C – Site Photographs

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019



Photograph 1: View of the low-density dwelling facing west from Mamre Road.



Photograph 2: View facing west from Mamre Road, looking at the unsealed road along the northern boundary of the site.



Photograph 3: Fenced areas for grazing of animals (sheep).



Photograph 4: Fenced areas for animals (chickens/roosters).



Photograph 5: Storage shed for machinery and equipment, located on the northern boundary in the eastern portion of the site.



Photograph 6: Site sheds located in the central portion of the site, used for storage of equipment and as a break area.



Photograph 7: Site sheds located in the central portion of the site, used for storage of equipment and as a break area.



Photograph 8: Small stockpile of rubbish bags, filled with general waste or mulch material.



Photograph 9: Fibro cement sheeting located within the central portion of the site.



Photograph 10: Power lines intersecting the property in a north-south direction. Located east of Kemps Creek.



Photograph 11: Power lines intersecting the property in a north-south direction. Located east of Kemps Creek.



Photograph 12: Looking west at the man-made dam encapsulating Kemps Creek. A small river system runs east of the dam.



Photograph 13: Looking west across Kemps Creek from the top of the dam wall. Hoses used to extract water can be seen in the foreground.



Photograph 14: Looking west at the man-made dam encapsulating Kemps Creek. A small river system runs east of the dam.



Photograph 15: Looking west at the man-made dam encapsulating Kemps Creek. A small river system runs east of the dam. A small pump house for extracting water from Kemps Creek can be seen at the top of the dam wall.



Photograph 16: View of the pump house used for extracting water from Kemps Creek.



Photograph 17: Looking west across Kemps Creek from the top of the dam wall. Hoses used to extract water can be seen in the foreground.



Photograph 18: Looking west at vacant/grazing land in the western portion of the site.



Photograph 19: Looking west at vacant/grazing land in the western portion of the site. Small excavations or inlets from a river system can be seen in the image.



Photograph 20: Excavations or former creek systems linking Kemps Creek in the western portion of the site.



Photograph 21: Backfill of bricks, concrete and waste into areas in the western portion of the site.



Photograph 22: Backfill of bricks, concrete and waste into areas in the western portion of the site.

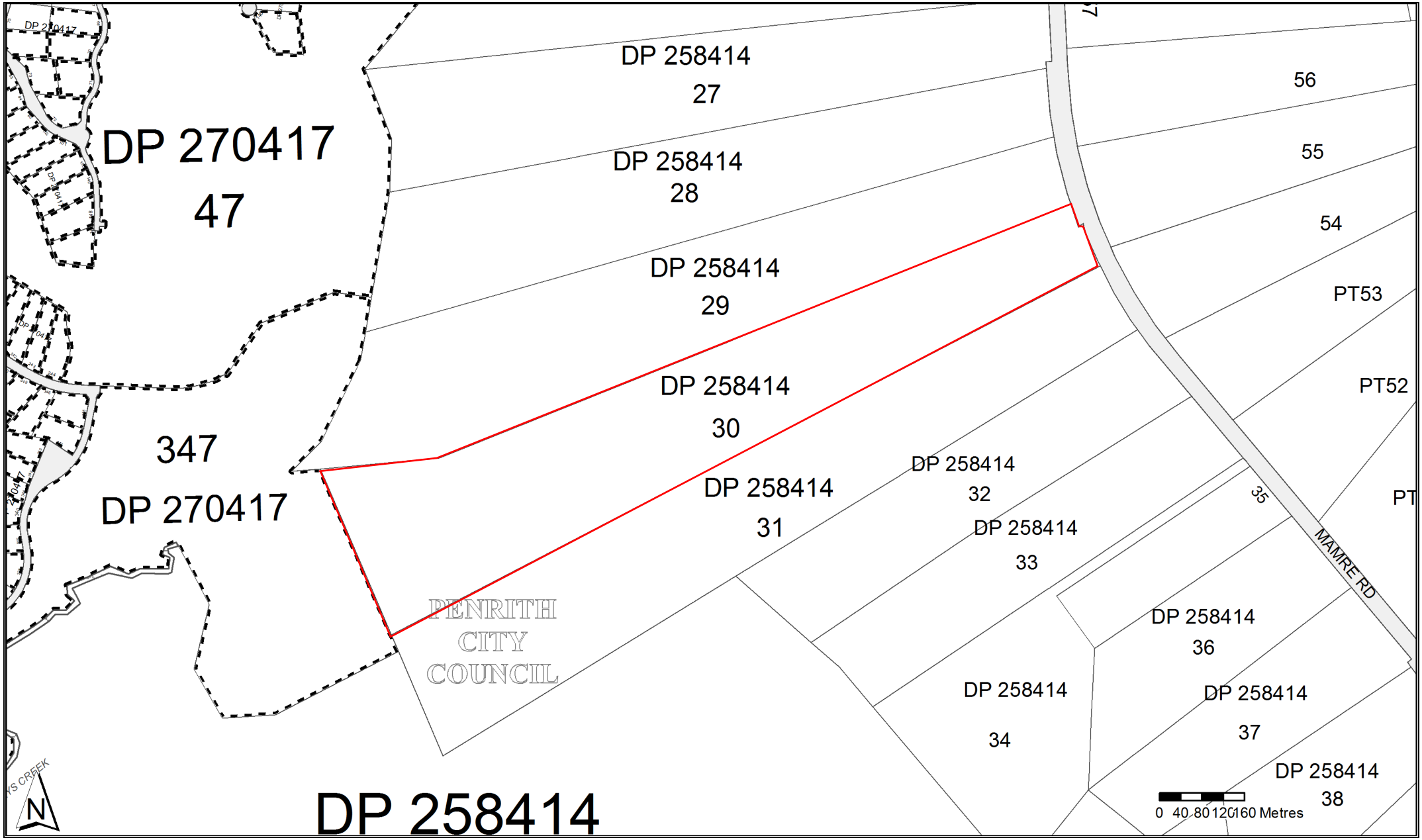
Appendix D – Land Title Documentation

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Cadastral Records Enquiry Report : Lot 30 DP 258414

Ref : kemps creek

Locality : KEMPS CREEK
Parish : CLAREMONT
LGA : PENRITH
County : CUMBERLAND



Report Generated 10:41:13 AM, 12 July, 2019
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This information is provided as a searching aid only.Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

InfoTrack

Req:R848234 /Doc:DP 0258414 P /Rev:21-Sep-1992 /Sts:OK.OK /Pgs:ALL /Prt:22-Jan-2019 21:31 /Seq:1 of 3
Ref:emps creek /Src:M

PLAN FORM 2

Plan Drawing only to appear in this space

* OFFICE USE ONLY

D. P. 258414

Signatures and seals only.

Registered: 4-10-1978

C.A.: NO. 5496 OF 3/3/1978

Title System: TORRENS

Purpose: SUBDIVISION

Ref. Map: PARISHES

Last Plans: D.P. 529420 D.P. 590871 D.P. 753938

PLAN OF SUBDIVISION OF LOT 2 DP 529420 (C.T. V. 10884 F. 224) LOT 71 D P 590871 (C T V 13426 F 49) PT PORS 28 & 29 PARISH OF CLAREMONT (F. P. 433336) (C.T. V. 5801 F. 140) POR. 30 PARISH OF CLAREMONT (F. P. 618811) (C.T. V. 4671 F. 41)

Reduce on Ratio 1: 8000

Lengths are in metres.

City: PENRITH

Locality: SOUTH ST MARYS

Parish: MELVILLE & CLAREMONT

County: CUMBERLAND

This is sheet 1 of my plan in 3 sheets

(Delete if inapplicable).

I, HARRY WILLIAM GARDNER

of 496 PACIFIC HIGHWAY, SINGFIELD

a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan

is accurate and has been made *(I) (from (2) under my immediate supervision) in accordance with the Survey Practice Regulations, 1933, and was completed on

10TH JANUARY 1979

Signature: Harry Gardner

Surveyor registered under Surveyors Act, 1929, as amended.

Delete (1) or (2). Insert date of survey.

Panel for use only for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919 IT IS INTENDED TO CREATE

1 RIGHT OF CARRIAGEWAY 20 WIDE
2 RIGHT OF WAY 10 WIDE
3 RIGHT OF WAY 10 WIDE & VARIABLE

AS SET OUT IN THE ACCOMPANYING INSTRUMENT ENDORSED BY THE COUNCIL CLERK.

Council Clerk's Certificate 17/78

I hereby certify that —

(a) the requirements of the Local Government Act, 1919, (other than the requirements for the registration of plans), and

(b) the requirements of section 24B of the Metropolitan Water, Sewerage and Drainage Act, 1924, as amended, Hunter District Water, Sewerage, and Drainage Act, 1938, as amended

have been complied with by the applicant in relation to the proposed Subdivision

Subdivision No. S.4496

Date 3.3.78

Signature: [signature]

Council Clerk

*This part of certificate is to be deleted where the application is only for a consolidation lot or the rounding of a road road or where the land is to be subdivided is wholly outside the area of operation of the Metropolitan Water Sewerage and Drainage Board and the Hunter District Water Board.

(Delete if inapplicable).

SOUTH CREEK TRAVERSE

LINE	BRG.	DIST.
A	350°03'	196.18
B	5°57' 40"	170.03
C	7°42' 50"	38.03
D	346°33' 50"	31.72
E	359°55' 50"	154.74
F	283°33' 40"	118.33
G	343°37' 30"	101.76
H	3°12' 10"	94.8

TABLE OF BOUNDARIES

No	BRG.	DIST.
1	175° 53' 45"	75.82
2	171° 14' 45"	42.58
3	171° 14' 45"	32.84
4	169° 35' 45"	75.825
5	161° 56' 45"	21.45
6	161° 56' 45"	45.485
7	59° 13' 40"	10.025
8	167° 06'	16.87
9	157° 06'	59.54
10	153° 53'	9.9
11	153° 53'	57.1
12	149° 25' 40"	39.655
13	145° 07' 30"	22.85
14	145° 07' 30"	38.085

RESTRICTION AS TO USER (H 107598)

DIAGRAM 1 NOT TO SCALE

DIAGRAM 2 NOT TO SCALE

DIAGRAM 3 SCALE — 1:2000

DIAGRAM 4 NOT TO SCALE

DIAGRAM 5 NOT TO SCALE

DIAGRAM 6 NOT TO SCALE

RIGHT OF WAY 10 WIDE & VARIABLE
EASEMENT FOR DRAINAGE (F. 917636)

(A) BENEFITES BY EASEMENTS C 370999 & C 370740 RIGHT OF WAY 10 WIDE.

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

SURVEYOR'S REFERENCE:

AMENDMENTS AND/OR ADDITIONS NOTED ON PLAN IN REGISTRAR GENERAL'S OFFICE

I, Bruce Richard Davies, Under Secretary for Lands and Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this day.

23rd July, 1981

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

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Your Searching Partner.

PLAN FORM 2 — Plan Drawing only to appear in this space — * OFFICE USE ONLY

D. P. 258414

Signatures and seals only.

SOUTH CREEK TRAVERSE		
LINE	BRG.	DIST.
A	352° 03′	196 · 18
B	5° 53′ 40″	170 · 03
C	7° 49′ 50″	39 · 05
D	344° 33′ 50″	31 · 77
E	299° 55′ 50″	154 · 24
F	263° 33′ 40″	118 · 33
G	343° 37′ 30″	101 · 76
H	3° 13′ 10″	94 · 8

RIGHT OF WAY 10 WIDE LOT 30		
1	329° 00′	56 · 71
2	355° 48′	19 · 18
3	25° 32′	62
4	33° 40′	45 · 95
5	44° 07′	37 · 29
6	57° 46′	51 · 55
7	70° 10′	51
8	87° 00′	35 · 63
9	117° 29′	102 · 31

TABLE OF BOUNDARIES		
No	BRG.	DIST.
1	175° 53′ 45″	75 · 82
2	171° 14′ 45″	42 · 98
3	171° 14′ 45″	32 · 84
4	166° 35′ 45″	75 · 825
5	161° 56′ 45″	21 · 45
6	161° 56′ 45″	45 · 485
7	56° 13′ 40″	10 · 025
8	167° 06′	16 · 87
9	157° 06′	59 · 54
10	153° 53′	9 · 9
11	153° 53′	57 · 1
12	149° 29′ 40″	59 · 655
13	145° 07′ 20″	22 · 85
14	145° 07′ 20″	38 · 085

DIAGRAM 1 NOT TO SCALE

DIAGRAM 2 NOT TO SCALE

DIAGRAM 3 SCALE – 1:2000

DIAGRAM 4 NOT TO SCALE

DIAGRAM 5 NOT TO SCALE

DIAGRAM 6 (NOT TO SCALE)

RESTRICTION AS TO USER (H.107598)

RIGHT OF WAY 10 WIDE & VARIABLE

EASEMENT FOR DRAINAGE (F.517638)

(A) BENEFITED BY EASEMENTS – C.370399 & C.370340.

RIGHT OF WAY 10 WIDE.

Registered: 4-10-1978

C.A.: NO. 5496 OF 3/3/1978

Title System: TORRENS

Purpose: SUBDIVISION

Ref. Map: PARISHES*

Last Plans: D.P.253503* D.P.818881 D.P.529420 D.P.590871 D.P.433338

PLAN OF SUBDIVISION OF LOT 2 D.P. 529420 (C.T. V.10884 F. 224) LOT 71 D.P. 590871 (C.T. V.13426 F. 49) PT PORS. 28 & 29 PARISH OF CLAREMONT (F.P. 433338) (C.T. V.5801 F. 140) POR. 30 PARISH OF CLAREMONT (F.P. 818811) (C.T. V.4671 F. 41)

Reduction Ratio 1: 8000
Lengths are in metres.

City: PENRITH

Locality: SOUTH ST MARYS

Parish: MELVILLE & CLAREMONT

County: CUMBERLAND

This is sheet 1 of my plan in 3 sheets. (Delete if inapplicable).

I, BARRY WILLIAM GARDNER of 606 PACIFIC HIGHWAY LINDFIELD a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan is accurate and has been made *(1) by me (2) under my immediate supervision in accordance with the Survey Practice Regulations, 1933, and was completed on † 17TH JANUARY 1973

Signature: [signature]

Surveyor registered under Surveyors Act, 1929, as amended.
Datum Line of Azimuth: 'A — B'
*Strike out either (1) or (2). †Insert date of survey.

Panel for use only for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919 IT IS INTENDED TO CREATE

1 RIGHT OF CARRIAGEWAY 20 WIDE
2 RIGHT OF WAY 10 WIDE
3 RIGHT OF WAY 10 WIDE & VARIABLE

AS SET OUT IN THE ACCOMPANYING INSTRUMENT ENDORSED BY THE COUNCIL CLERK.

Council Clerk's Certificate 17/78

I hereby certify that –

(a) the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and

*(b) the requirements of section 348 of the †Metropolitan Water, Sewerage and Drainage Act, 1924, as amended, †Hunter District Water, Sewerage, and Drainage Act, 1938, as amended

have been complied with by the applicant in relation to the proposed Subdivision (insert "new road", "subdivision" or "consolidated lot") set out herein

Subdivision No. 5496

Date 3.3.78

(Signature) [signature] Council Clerk

*This part of certificate to be deleted where the application is only for a consolidated lot or the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Metropolitan Water, Sewerage and Drainage Board and the Hunter District Water Board.
†Delete if inapplicable.

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

SURVEYOR'S REFERENCE:

AMENDMENTS AND/OR ADDITIONS NOTED ON PLAN IN REGISTRAR GENERAL'S OFFICE

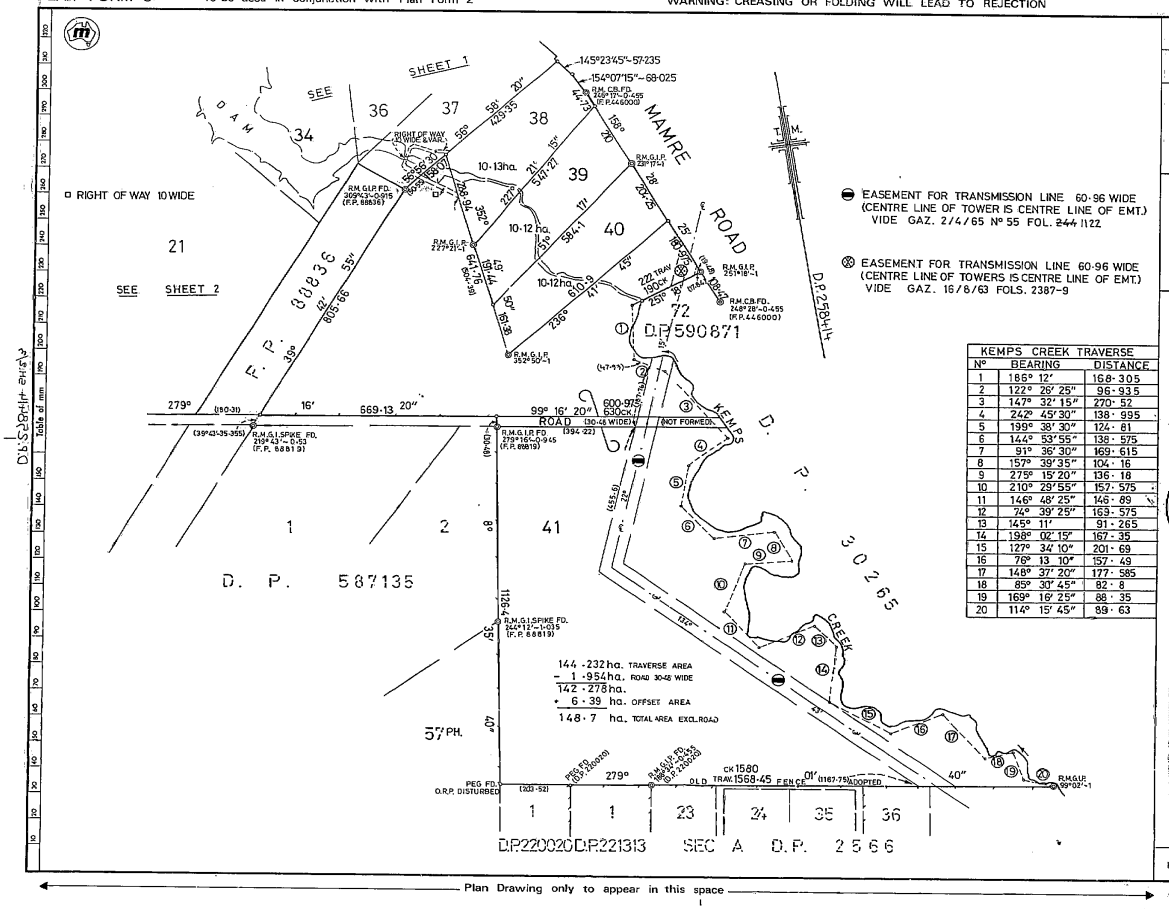
I, Bruce Richard Davies, Under Secretary for Lands and Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this day.

23rd July, 1981

Req:R848234 /Doc:DP 0258414 P /Rev:21-Sep-1992 /Sts:OK.OK /Pgs:ALL /Prt:22-Jan-2019 21:31 /Seq:1 of 3
Ref:emps creek /Src:M

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

PLAN FORM 3 To be used in conjunction with Plan Form 2 WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION * OFFICE USE ONLY (3)



KEMPS CREEK TRAVERSE		
Nº	BEARING	DISTANCE
1	186° 12′	158·305
2	122° 26′ 25″	96·935
3	147° 32′ 15″	270·52
4	242° 45′ 30″	138·995
5	199° 38′ 30″	124·81
6	144° 53′ 55″	138·575
7	91° 36′ 30″	169·615
8	157° 39′ 35″	104·16
9	275° 15′ 20″	136·18
10	210° 29′ 55″	152·575
11	146° 48′ 25″	146·89
12	74° 39′ 25″	169·575
13	145° 11′	91·265
14	198° 02′ 15″	167·35
15	127° 34′ 10″	201·69
16	76° 13′ 10″	157·49
17	148° 37′ 20″	177·585
18	85° 30′ 45″	82·8
19	169° 16′ 25″	88·35
20	114° 15′ 45″	89·63

D.P. 258414

Registered: 4-10-1978

This is sheet 2 of my plan in 3 sheets dated 17/1/78

Surveyor registered under Surveyors Act 1929.

This is sheet 2 of the plan of 3 Sheets covered by my Certificate No. 17/78 of 3/3/78

Council Clerk

Signatures and seals only.

Reduction Ratio 1: 8000

AMENDMENT TO GAZ. FOLIO Nº MADE IN R&O VIDE D.P. 258414 PUBLISHED 14-7-1978.

Plan Drawing only to appear in this space

SURVEYOR'S REFERENCE

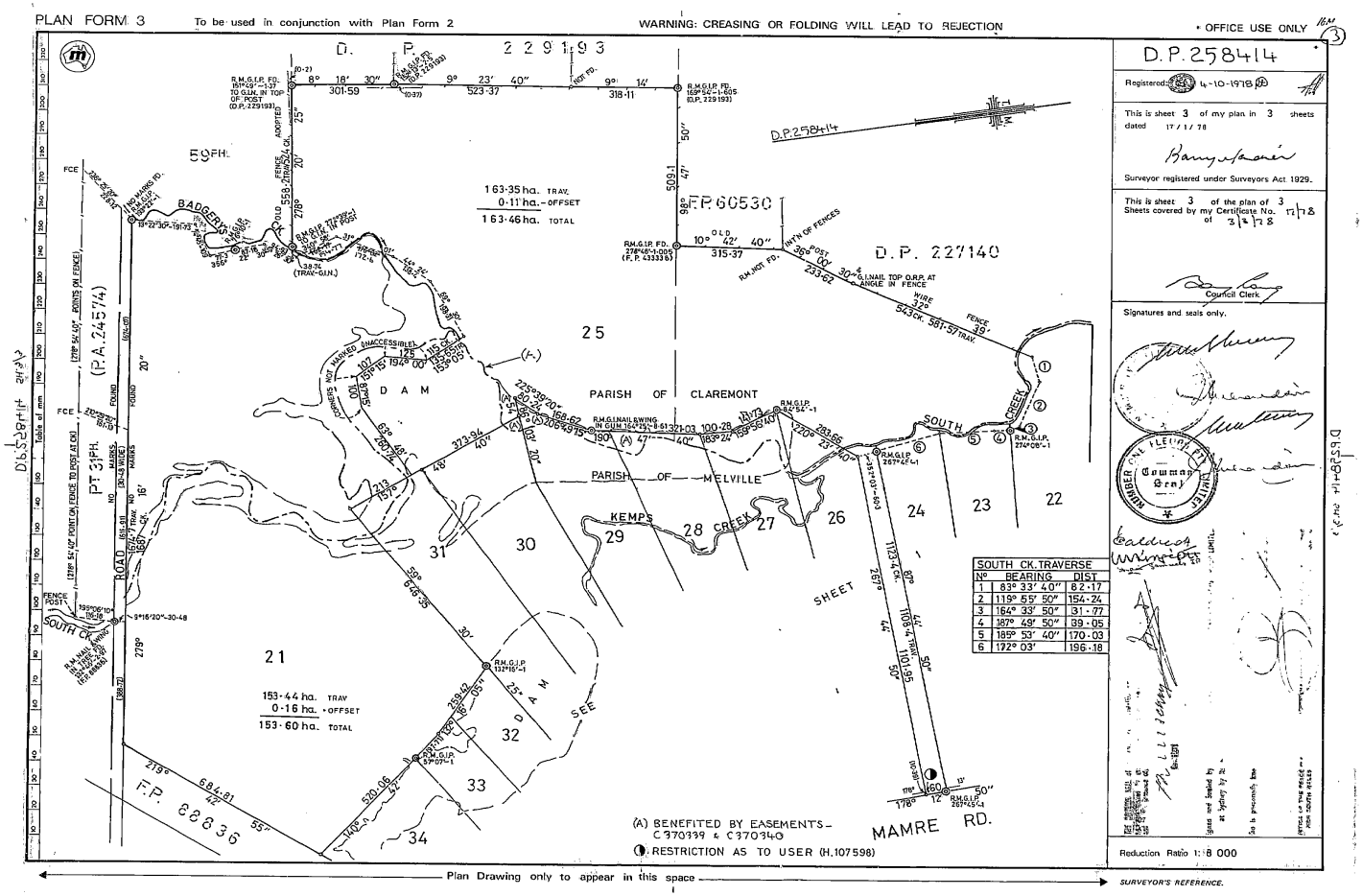
AMENDMENTS AND/OR ADDITIONS NOTED ON PLAN IN REGISTRAR GENERAL'S OFFICE

I, Bruce Richard Davies, Under Secretary for Lands and Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this day.

23rd July, 1981

Req:R848234 /Doc:DP 0258414 P /Rev:21-Sep-1992 /Sts:OK.OK /Pgs:ALL /Prt:22-Jan-2019 21:31 /Seq:2 of 3
Ref:emps creek /Src:M

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019



Req:R848234 /Doc:DP 0258414 P /Rev:21-Sep-1992 /Sts:OK.OK /Pgs:ALL /Prt:22-Jan-2019 21:31 /Seq:3 of 3
Ref:emps creek /Src:M

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

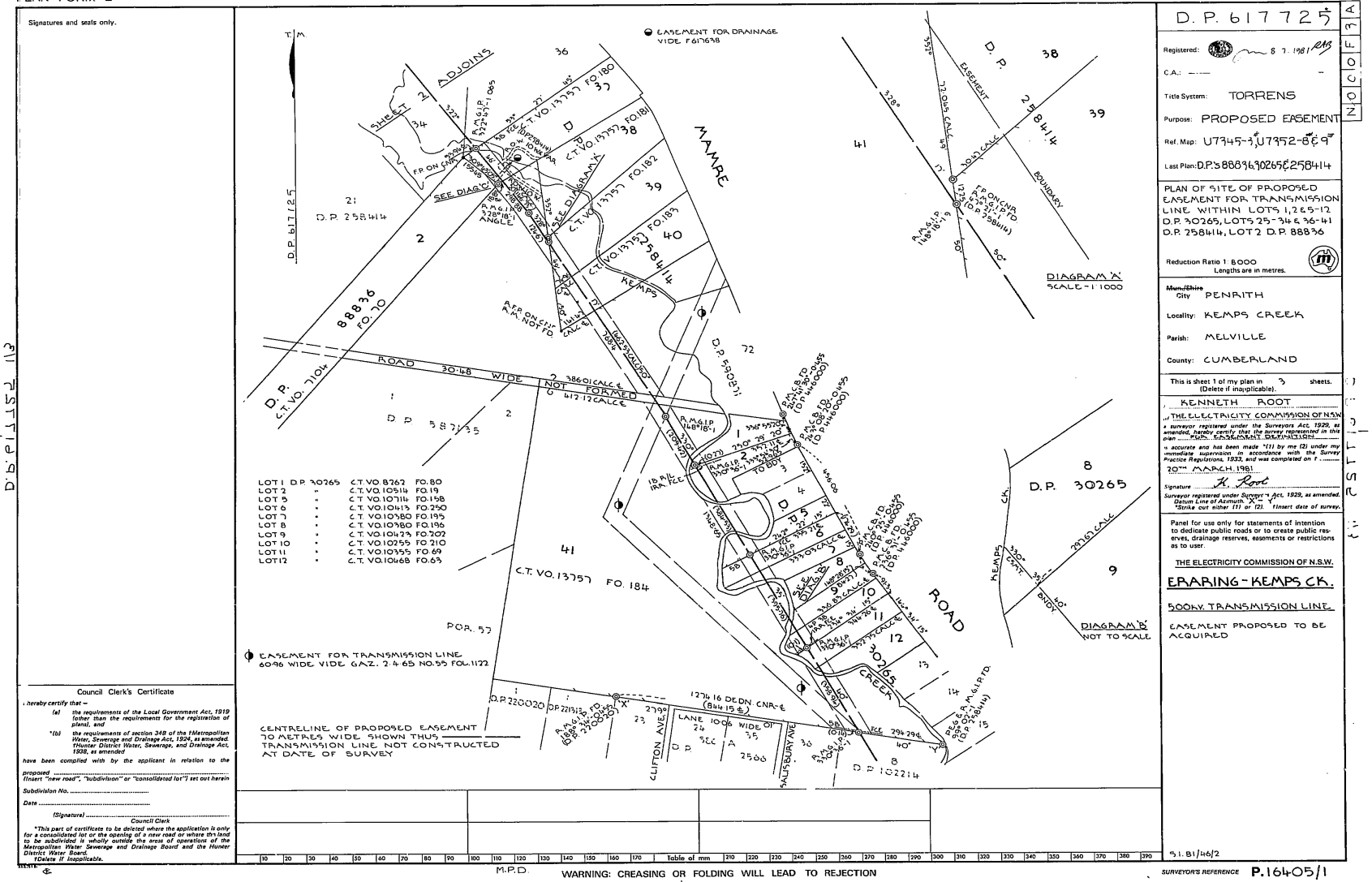
InfoTrack
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Req:R646275 /Doc:DP 0617725 P /Rev:28-Nov-1992 /Sts:OK.OK /Pgs:ALL /Prt:12-Jul-2019 10:35 /Seq:1 of 3
Ref:kemps /Src:M

PLAN FORM 2 — Plan Drawing only to appear in this space — *OFFICE USE ONLY

D.P. 617725

Signatures and seals only.



Council Clerk's Certificate

I hereby certify that —

(a) the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and

*(b) the requirements of section 34B of the †Metropolitan Water, Sewerage and Drainage Act, 1924, as amended. †Hunter District Water, Sewerage, and Drainage Act, 1938, as amended

have been complied with by the applicant in relation to the proposed ..... [Insert "new road", "subdivison" or "consolidated lot"] set out herein

Subdivision No. .....

Date .....

[Signature] ..... Council Clerk

*This part of certificate to be deleted where the application is only for a consolidated lot or the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Metropolitan Water Sewerage and Drainage Board and the Hunter District Water Board.

†Delete if inapplicable.

Registered: 8.7.1981

C.A.: ——

Title System: TORRENS

Purpose: PROPOSED EASEMENT

Ref. Map: U7345-3, U7352-8

Last Plan: D.P.'s 88836, 30265, 258414

PLAN OF SITE OF PROPOSED EASEMENT FOR TRANSMISSION LINE WITHIN LOTS 1, 2 & 5-12 D.P. 30265, LOTS 25-34 & 36-41 D.P. 258414, LOT 2 D.P. 88836

Reduction Ratio 1:8000
Lengths are in metres.

Mun./Shire City: PENRITH

Locality: KEMPS CREEK

Parish: MELVILLE

County: CUMBERLAND

This is sheet 1 of my plan in 3 sheets. (Delete if inapplicable).

I KENNETH ROOT

of THE ELECTRICITY COMMISSION OF N.S.W.

a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan was made by EASEMENT DEFINITION

is accurate and has been made *(1) by me (2) under my immediate supervision in accordance with the Survey Practice Regulations, 1933, and was completed on the 20TH MARCH, 1981

Signature K. Root

Surveyor registered under Survey Act, 1929, as amended. Datum Line of Azimuth: X — Y

*Strike out either (1) or (2). †Insert date of survey.

Panel for use only for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

THE ELECTRICITY COMMISSION OF N.S.W.

ERARING - KEMPS CK.

500kV. TRANSMISSION LINE.

EASEMENT PROPOSED TO BE ACQUIRED

51.81/46/2

M.P.D.

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

SURVEYOR'S REFERENCE P.16405/1

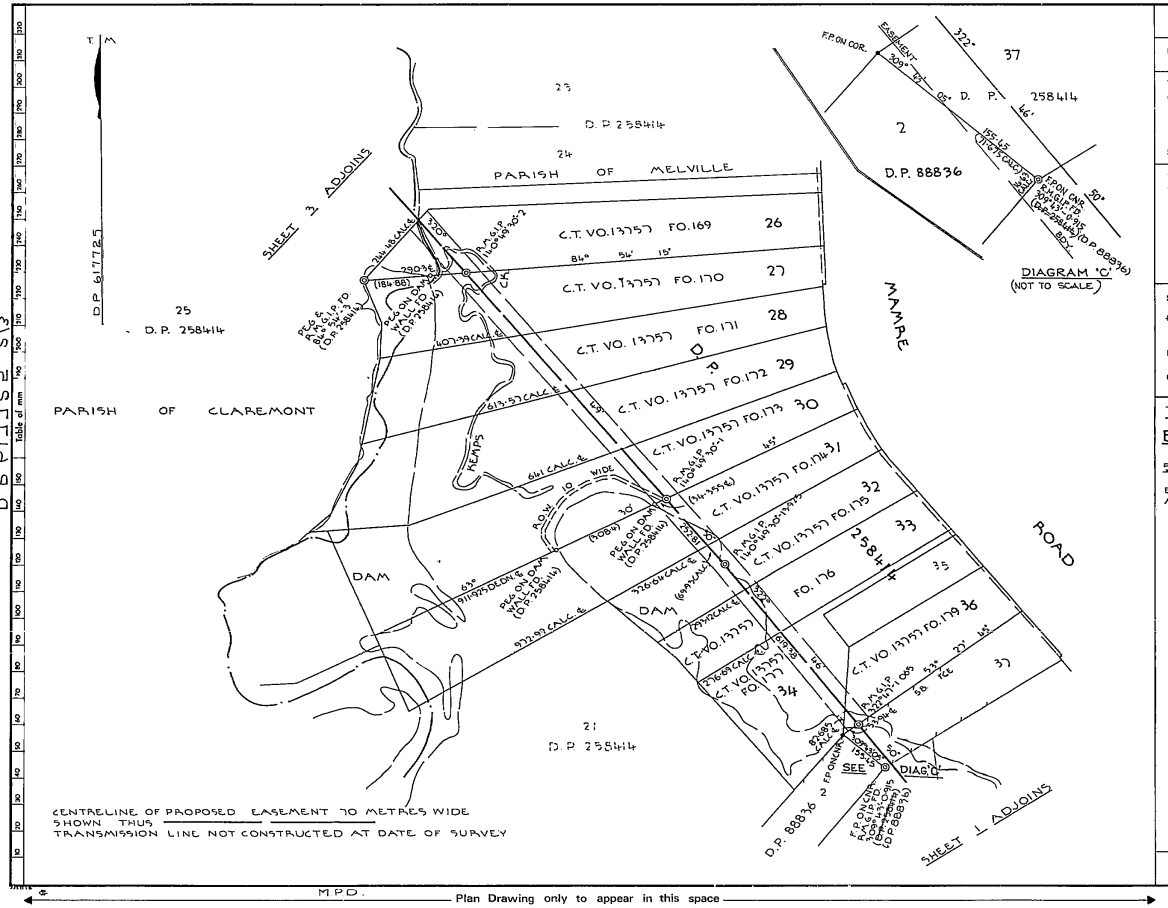
I, Bruce Richard Davies, Under Secretary for Lands and Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this day.

10th July, 1981

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Req:R646275 /Doc:DP 0617725 P /Rev:28-Nov-1992 /Sts:OK.OK /Pgs:ALL /Prt:12-Jul-2019 10:35 /Seq:2 of 3
Ref:kemps /Src:M

PLAN FORM 3 To be used in conjunction with Plan Form 2 WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION * OFFICE USE ONLY



D. P. 617725

Registered: 8.7.1981

This is sheet 2 of my plan in 3 sheets dated 20TH MARCH, 1981

K. Root
Surveyor registered under Surveyors Act 1929.

This is sheet of the plan of Sheets covered by my Certificate No. of

Council Clerk

Signatures and seals only.

~~MUNICIPALITY~~ CITY: PENRITH

PARISH: CLAREMONT & MELVILLE

COUNTY: CUMBERLAND

THE ELECTRICITY COMMISSION OF N.S.W.

ERARING-KEMPS CK.

500kV TRANSMISSION LINE

EASEMENT PROPOSED TO BE ACQUIRED

Reduction Ratio 1: 8000

Lengths are in metres

SURVEYOR'S REFERENCE P.16405/2

MPD.

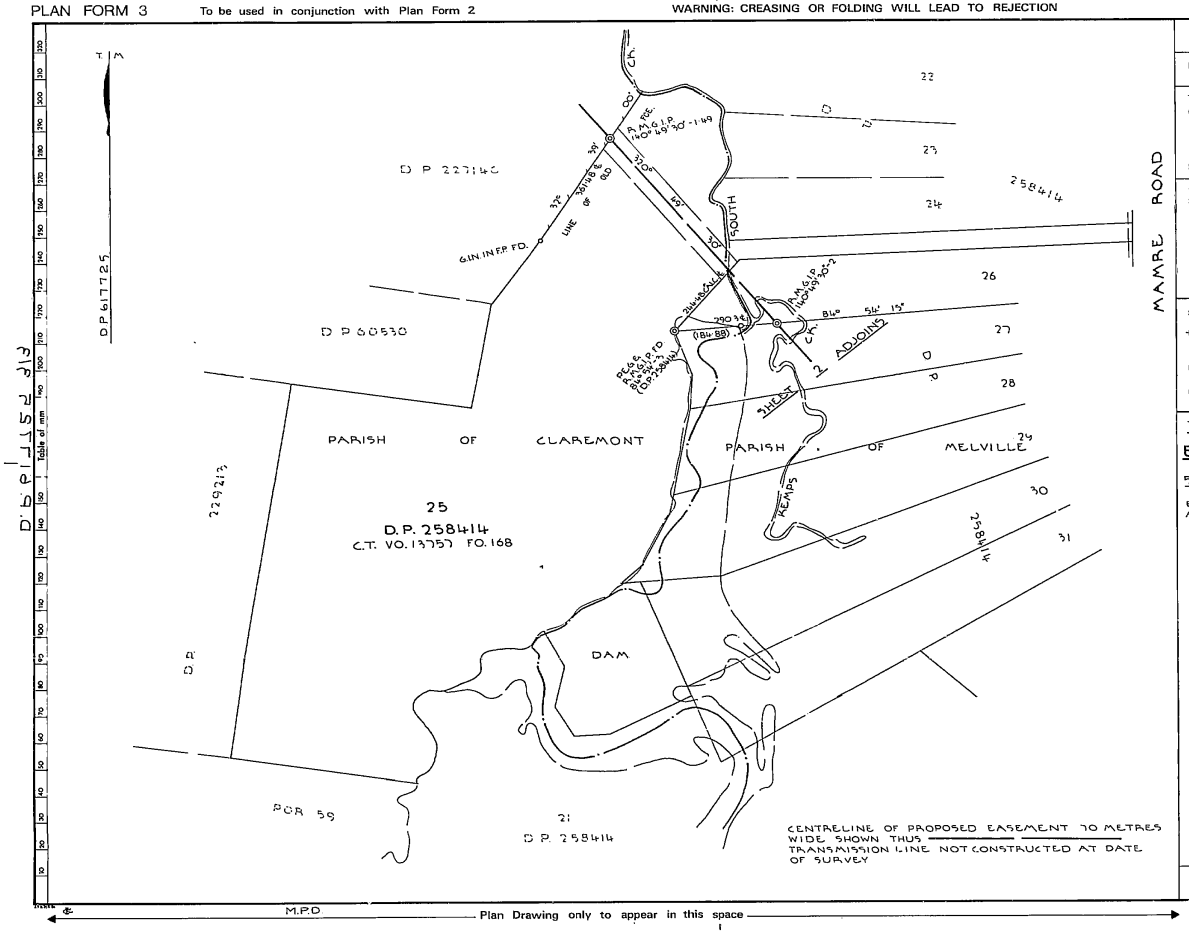
Plan Drawing only to appear in this space

I, Bruce Richard Davies, Under Secretary for Lands and Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this day.

10th July, 1981

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

PLAN FORM 3 To be used in conjunction with Plan Form 2 WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION * OFFICE USE ONLY



D. P. 617725 *

Registered: 8 7 1981

This is sheet 3 of my plan in 3 sheets dated 20TH MARCH 1981

Surveyor registered under Surveyors Act 1929.

This is sheet of the plan of Sheets covered by my Certificate No. of

Council Clerk

Signatures and seals only.

~~MUN/SHIRE~~ CITY: PENRITH

PARISH: CLAREMONT & MELVILLE

COUNTY: CUMBERLAND

THE ELECTRICITY COMMISSION OF N.S.W.

ERARING-KEMPS CK.

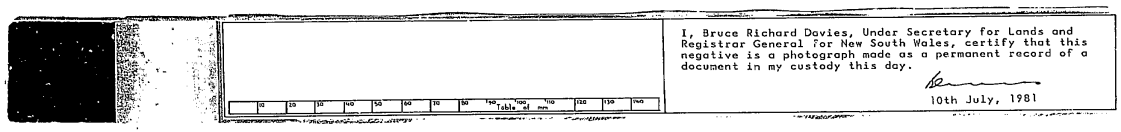
500KV. TRANSMISSION LINE

EASEMENT PROPOSED TO BE ACQUIRED

Reduction Ratio 1: 8000

Lengths are in metres

SURVEYOR'S REFERENCE P.16405/3



I, Bruce Richard Davies, Under Secretary for Lands and Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this day.

10th July, 1981

Req:R646275 /Doc:DP 0617725 P /Rev:28-Nov-1992 /Sts:OK.OK /Pgs:ALL /Prt:12-Jul-2019 10:35 /Seq:3 of 3
Ref:kemps /Src:M

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Req:R848222 /Doc:CT 10884-224 CT /Rev:19-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:22-Jan-2019 21:04
Ref:kemps creek /Src:M

[redacted]

10884224

NEW SOUTH WALES

FICATE OF TITLE

OPERTY ACT, 1900, as amended.

Vol. 10884 Fol. 224

Edition issued 11-9-1968

Appln. No.7336

For Crown Grants see Schedule

Prior Title Vol.6886 Fol. 54

AS K943628 **CANCELLED**

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness L. Bollinger

Registrar General.

Vol. 10884 Fol. 224 (Page 1)

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 529420 in the City of Penrith Parishes of Claremont and Melville and County of Cumberland being the lands granted by the Crown Grants set out in the Schedule hereunder. EXCEPTING THEREOUT the road shown in the plan hereon and the land in Acquisition No.F617638.

SCHEDULE OF GRANTS

Parish	Portion	Name of Grantee	Date of Grant
Claremont and Melville	55	Nicholas Bayly	18-12-1805
Melville	53	Richard Fitzgerald	18-12-1805
Melville	54	Nicholas Bayly	1 -1-1810
	Pt.61		1 -1-1810
	65		13 -1-1818

FIRST SCHEDULE (continued overleaf)

NUMBER TWO FLEURS PTY. LIMITED.

Registrar General

SECOND SCHEDULE (continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grants above referred to.
2. Easement for Drainage created by Transfer No.F617638 affecting the piece of land 20 feet wide shown in the plan hereon.
3. ~~Mortgage No.G104014 to The Commercial Bank of Australia Limited. Entered 6-12-1954.~~
4. Restriction on User No.H107598 of land shown by hatching in plan hereon - See Section 27E (6) Main Roads Act, 1924. Entered 2-4-1959.

Registrar General

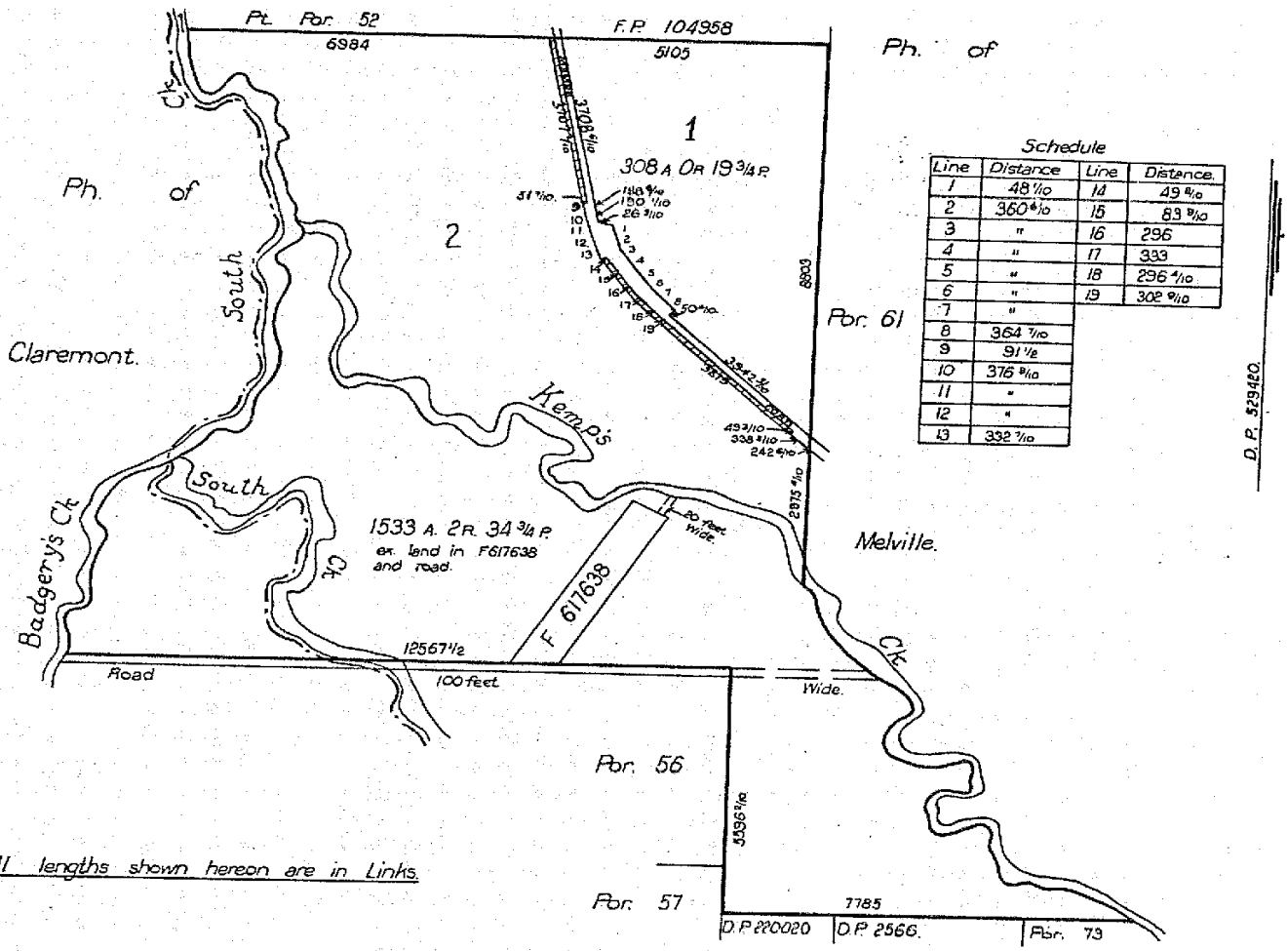
PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

Document Set ID: 8964019
Version: 1, Version Date: 19/12/2018

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

Vol. 10884 Fol. 224



Schedule

Line	Distance	Line	Distance
1	48 1/10	14	49 9/10
2	360 4/10	15	83 9/10
3	"	16	296
4	"	17	333
5	"	18	296 4/10
6	"	19	302 9/10
7	"		
8	364 7/10		
9	91 1/2		
10	376 9/10		
11	"		
12	"		
13	332 7/10		

All lengths shown hereon are in Links.

Document Set ID: 8964019
Version: 1 Version Date: 16/12/2019

Req:R848222 /Doc:CT 10884-224 CT /Rev:19-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:22-Jan-2019 21:04
Ref:kemps creek /Src:M

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
This deed is cancelled as to the whole New certificates of Title have issued on 14-12-1978 for lots in Deposited Plan No 258414 as follows: Lots 21 and 44 Vol 13757 Fol 164 to 184 respectively. REGISTRAR GENERAL					
NEW CERTIFICATE(S) OF TITLE ISSUING ON DP258414 NO DEALING TO BE REGISTERED WITHOUT REFERENCE TO SURVEY PLANNING BRANCH.					

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
~~Mortgage~~	~~K943631~~	~~25-1-1968~~	~~To F.H. Bowen Pty Limited~~	~~1-10-1968~~		~~Discharged~~	~~Q629197~~	
~~Mortgage~~	~~157587~~	~~27-7-1960~~	~~to Australia and New Zealand Bank Limited~~	~~24-9-1969~~		~~Discharged~~	~~Q 65729~~	
Mortgage	M844693	6-6-1972	to Midland Credit Limited	21-8-1972				
~~Caveat~~	~~P284318~~			~~12-6-1975~~		~~Withdrawn~~	~~P412530~~	
Mortgage	Q629201		to Australia and New Zealand Banking Group limited	11-9-1978				
Mortgage	M844693		Priority now being Q629201 M844693. See Postponement					
Mortgage	Q629201		Q629200.	11-9-1978				
			Interests created pursuant to Section 88B Conveyancing Act, 1919, by the registration of Deposited Plan 258414.	4-10-1978				

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Req:R848222 /Doc:CT 10884-224 CT /Rev:19-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:22-Jan-2019 21:04
Ref:kemps creek /Src:M
Page 3 of 3 pages

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Req:R848222 /Doc:CT 10884-224 CT /Rev:19-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:22-Jan-2019 21:04
Ref:kemps creek /Src:M

Vol. 10884 Fol. 224

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT			ENTERED	Signature of Registrar General
	NATURE	NUMBER	DATE		

SECOND SCHEDULE (continued)

INSTRUMENT			PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
NATURE	NUMBER	DATE						

Req:R645987 /Doc:CT 13757-173 CT /Rev:24-Feb-2011 /Sts:OK.SC /Pgs:ALL /Prt:12-Jul-2019 10:12
Ref:kemps creek /Src:M

CERTIFICATE OF TITLE

NEW SOUTH WALES

PROPERTY ACT, 1900

13757/173

Appln. Nos.7336 and 31881

Prior Titles Vol. 4671 Fol. 41
Vol.10884 Fol.224

Vol. 13757 Fol. 173

EDITION ISSUED

15 12 1978

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

CANCELLED

Registrar General.

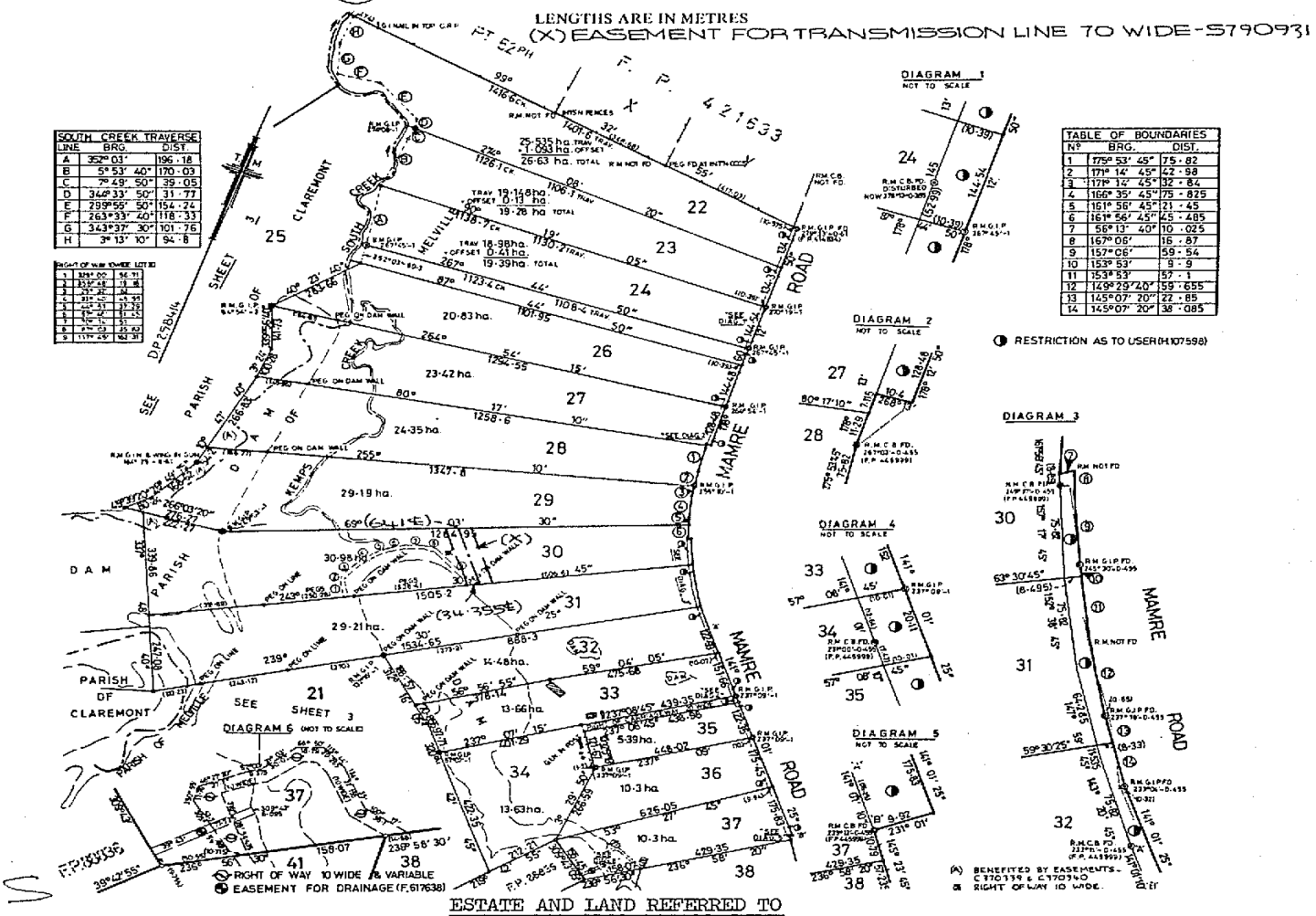
SEE AUTO FOLIO

(Page 1) Vol. 13757 Fol. 173

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES

(X) EASEMENT FOR TRANSMISSION LINE 70 WIDE-S790931



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 30 in Deposited Plan 258414 at South St.Marys in the City of Penrith Parishes of Claremont and Melville and County of Cumberland being part of Portion 55 (Parish of Melville) granted to Nicholas Bayly on 18-12-1805; part of Portion 54 (Parish of Melville) granted to Nicholas Bayly on 1-1-1810 and part of Portion 30 (Parish of Claremont) granted to William Tindall on 5-4-182.

FIRST SCHEDULE

NUMBER TWO FLEURS PTY. LIMITED.

SECOND SCHEDULE

GRY
1. Reservations and conditions, if any, contained in the Crown Grants above referred to.

RWZ
2. C370339 Right of Way appurtenant to the land above described shown so benefited in Deposited Plan 258414 affecting the part of Lot 1 in ~~Deposited Plan~~ 60530 shown so burdened in Deposited Plan 185950.

RWP
3. C370340 Right of Way appurtenant to the part of the land above described shown so benefited in Deposited Plan 258414 affecting Lot 1 in ~~Deposited Plan~~ 309802 shown so burdened therein.

RT(SB)
4. H107598 Restriction on user (see section 27E(6) Main Roads Act, 1924) affecting the part of the land above described shown so burdened in Deposited Plan 258414.

5. ~~M844693 Mortgage to Midland Credit Limited.~~ Discharged Q918132

6. ~~Q629201 Mortgage to Australia and New Zealand Banking Group Limited.~~ W776265

7. ~~M844693) Mortgages. Priority is now Q629201 and M844693 (see Postponement of Mortgage Q629201) Q629200).~~ Cancelled Q918132

RW(SB)
8. DP258414 Right of Way 10 wide affecting the part of the land above described shown so burdened in Deposited Plan 258414.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

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Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Vol. 13757 Fol. 173

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	REGISTERED	Signature of Registrar General

Q918132 Dan
— 34 Ln R
R645933 Dan R

CT 10.6.85

DP610242

DP617725

Resumed easement for transmission line purposes Gaz. 4-9-81 Fol. 4741.

5790931 Ln

W776205D/Ln

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	PARTICULARS	REGISTERED	Signature of Registrar General	CANCELLATION	
~~Mortgage~~	~~Q918134~~	~~to Finance Corporation of Australasia Limited~~	~~9-5-1979~~		Discharged	R645933
RU	DP610242	Restrictions as to user	4-7-1980			
5790931		Resumption. Easement for Transmission line affecting the land shown so burdened in the plan hereon				
ET		Registered 7-12-1981 DP617725				

(Page 2 of 2 pages)

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Req:R645987 /Doc:CT 13757-173 CT /Rev:24-Feb-2011 /Sts:OK.SC /Pgs:ALL /Prt:12-Jul-2019 10:12
Ref:kemps creek /Src:M

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
9/7/2019 12:50PM

FOLIO: 30/258414

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 13757 FOL 173

Recorded	Number	Type of Instrument	C.T. Issue
5/6/1987		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
22/6/1987		AMENDMENT: PARISH-COUNTY	
27/1/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
8/6/1989	Y417658	TRANSFER	EDITION 1
18/11/1993		AMENDMENT: LOCAL GOVT AREA	
20/12/1995	O726918	REQUEST	
14/9/2000	7089785	DEPARTMENTAL DEALING	
26/2/2002	8181648	REQUEST	
26/2/2002	8181652	REQUEST	
12/1/2018	AN38693	CAVEAT	

*** END OF SEARCH ***

kemps creek PRINTED ON 9/7/2019

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Received: 09/07/2019 12:50:18

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 30/258414

SEARCH DATE	TIME	EDITION NO	DATE
12/7/2019	10:37 AM	1	8/6/1989

LAND

LOT 30 IN DEPOSITED PLAN 258414
AT SOUTH ST. MARYS
LOCAL GOVERNMENT AREA PENRITH
PARISH OF CLAREMONT COUNTY OF CUMBERLAND
PARISH OF MELVILLE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP258414

FIRST SCHEDULE

DONATO D'ASCANIO
LUCIA D'ASCANIO
AS JOINT TENANTS (T Y417658)

SECOND SCHEDULE (6 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 H107598 RESTRICTION ON USER (S.27E(6) MAIN ROADS ACT, 1924) AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
3 DP258414 RIGHT OF WAY AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
4 DP610242 RESTRICTION(S) ON THE USE OF LAND
5 S790931 EASEMENT FOR TRANSMISSION LINE AFFECTING THE LAND SHOWN SO BURDENED IN DP617725
* O726918 EASEMENT NOW VESTED IN NEW SOUTH WALES ELECTRICITY TRANSMISSION AUTHORITY
* 6 AN38693 CAVEAT BY BRIDGES FINANCE PTY LTD

NOTATIONS

NOTE: THE CERTIFICATE OF TITLE FOR THIS FOLIO OF THE REGISTER DOES NOT INCLUDE SECURITY FEATURES INCLUDED ON COMPUTERISED CERTIFICATES OF TITLE ISSUED FROM 4TH JANUARY, 2004. IT IS RECOMMENDED THAT STRINGENT PROCESSES ARE ADOPTED IN VERIFYING THE IDENTITY OF THE PERSON(S) CLAIMING A RIGHT TO DEAL WITH THE LAND COMPRISED IN THIS FOLIO.

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

kemps PRINTED ON 12/7/2019

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

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Received: 12/07/2019 10:37:06

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Appendix E – SafeWork NSW Search Results

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

NSW GOVERNMENT | SafeWork NSW

Locked Bag 2906, Lisarow NSW 2252
Customer Experience 13 10 50
ABN 81 913 830 179 | www.safework.nsw.gov.au

Our Ref: D19/168409

1 August 2019

EI Australia
Mr Lance Chen
Suite 6.01
55 Miller St
PYRMONT NSW 2009

Dear Mr Chen

RE SITE: 859 Mamre Rd, Kemps Creek NSW 2178

I refer to your site search request received by SafeWork NSW on 19 July 2019 requesting information on Storage of Hazardous Chemicals for the above site.

A search of the records held by SafeWork NSW has not located any records pertaining to the above-mentioned premises.

For further information or if you have any questions, please call us on 13 10 50 or email licensing@safework.nsw.gov.au

Yours sincerely

Customer Service Officer
Customer Experience - Operations
SafeWork NSW

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Appendix F – Groundwater Bore Search

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

State Overview
State Overview

Rivers and Streams
favourites · search · download sites · find a site
Real Time Data - Rivers And Streams

Daily River Reports
Daily River Reports

Dams
favourites · search · download sites · find a site
Real Time Data - Major Dams

Groundwater (Telemetered data)
favourites · search · download sites · find a site
Real Time Data - Bores

All Groundwater Site details
search · download sites · find a site
All Groundwater Map

Meteorology
favourites · search · download sites · find a site
Real Time Data - Weather Stations

Hunter Integrated Telemetry System
Hunter Integrated Telemetry System

bandwidth ◉ high ○ low

glossary and metadata

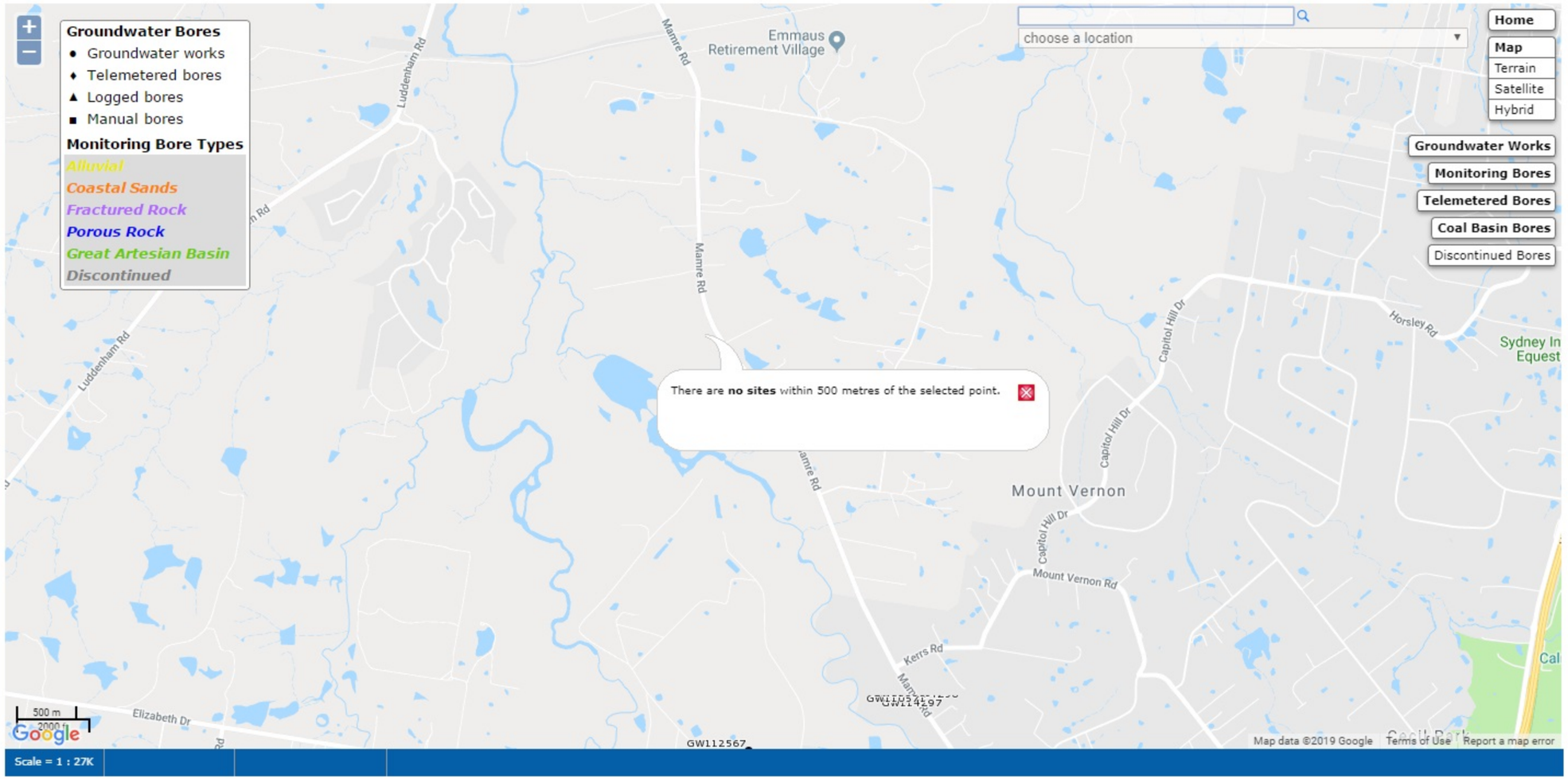
All Groundwater Site Details

All Groundwater Map

bookmark this page

All data times are Eastern Standard Time

Map | Info



Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Appendix G – Borehole Logs

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

BOREHOLE: BH1

eiaustralia
Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH1_0.1-0.2 QD1/ QT1 PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.60								
					BH1_0.7-0.8 ES PID = 0.3 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.50								
									Hole Terminated at 1.50 mBGL; Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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

EIA LIB 1.03.GLB Log IS AU BOREHOLE 3 E24278.E02.GPJ <<DrawingFile>> 14/08/2019 09:36 10.0.000 Datgel Lab and In Situ Tool - DGD | Lib: EIA 1.03 2014-07-05 Prj: EIA 1.03 2014-07-05

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

BOREHOLE: BH2

eiaustralia
Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH2_0.1-0.2 ES PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH2_0.5-0.6 ES PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.20*								
									Hole Terminated at 1.20 mBGL; Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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

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BOREHOLE: BH3

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH3_0.1-0.2 ES PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH3_0.5-0.6 ES PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.50*								
									Hole Terminated at 1.50 mBGL; Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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

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BOREHOLE: BH4

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH4_0.2-0.4 ES 0.20-0.40 m 0.20 m PID = 0.4 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.	M	-	TOPSOIL
				0.90								
			1		BH4_0.9-1.0 ES 0.90-1.00 m 0.90 m PID = 0.4 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.			RESIDUAL SOIL
				1.50								
									Hole Terminated at 1.50 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH5

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH5_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	FILL: Gravelly SAND; fine to medium grained, pale brown to brown, with fine to medium grained and sub-angular to angular gravels, no odour.			FILL
				0.40				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.50*					Hole Terminated at 1.50 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH6

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH6_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm	■		-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.50*					Hole Terminated at 1.50 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH7

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH7_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.50								
					BH7_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH8_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
			1		BH8_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
				1.50								
									Hole Terminated at 1.50 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH9

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH9_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH9_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.50								
									Hole Terminated at 1.50 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH10

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH10_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.			RESIDUAL SOIL
			1		BH10_1.0-1.1 ES 1.00-1.10 m					M	-	
				1.40				-	SHALE; extremely weathered, grey, no odour.			BEDROCK
			2	2.00					Hole Terminated at 2.00 m Target Depth Reached.			
			3									
			4									
			5									
			6									

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BOREHOLE: BH11

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.20	BH11_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm BH11_0.3-0.4 ES 0.30-0.40 m 0.30 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.	M	-	TOPSOIL
			1					CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.			RESIDUAL SOIL
				1.50					Hole Terminated at 1.50 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH12

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH12_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH12_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH13

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH13_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH13_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.3 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH14

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH14_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH15

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH15_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH16_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH16_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.4 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH17

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.20	BH17_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
					BH17_0.3-1.0 ES 0.30-0.40 m 0.30 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH18

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH18_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm BH18_0.4-0.5 ES 0.40-0.50 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH19

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH19_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH20

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH20_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH21_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.4 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.	M	-	TOPSOIL
				0.50								
					BH21_0.6-0.7 ES 0.60-0.70 m 0.60 m PID = 0.7 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.			RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH22_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.5 ppm			-	FILL: Gravelly SAND; fine to medium grained, pale brown to brown, with fine to medium grained and sub-angular to angular gravels, no odour.			FILL
				0.40	BH22_0.4-0.6 ES 0.40-0.60 m 0.40 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH23_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.4 ppm			-	FILL: Gravelly SAND; fine to medium grained, pale brown to brown, with fine to medium grained and sub-angular to angular gravels, no odour.			FILL
				0.40								
					BH23_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH24_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	FILL: Gravelly SAND; fine to medium grained, pale brown to brown, with fine to medium grained and sub-angular to angular gravels, no odour.			FILL
				0.40								
					BH24_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.3 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH25

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.20	BH25_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm BH25_0.3-0.4 ES 0.30-0.40 m 0.30 m PID = 0.1 ppm			-	FILL: Gravelly SAND; fine to medium grained, pale brown to brown, with fine to medium grained and sub-angular to angular gravels, no odour.			FILL
								CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH26

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH26_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.8 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH26_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.4 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.10					Hole Terminated at 1.10 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH27

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH27_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH27_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.7 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH28_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH28_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.4 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH29_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.8 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH29_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.9 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH30

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH30_0.1-0.2 ES 0.10-0.20 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH31

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH31_0.1-0.2 ES 0.10-0.20 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH32

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH32_0.1-0.2 ES 0.10-0.20 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH33

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH33_0.1-0.2 ES 0.10-0.20 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH34

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH34_0.1-0.2 ES 0.10-0.20 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH35

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH35_0.1-0.2 ES 0.10-0.20 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH36

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH36_0.1-0.2 ES 0.10-0.20 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH37

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH37_0.1-0.2 ES 0.10-0.20 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH38

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH38_0.1-0.2 ES 0.10-0.20 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH39

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH39_0.1-0.2 ES 0.10-0.20 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH40

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH40_0.1-0.2 ES 0.10-0.20 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH41

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH41_0.1-0.2 ES 0.10-0.20 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
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This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH42

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH42_0.1-0.2 ES 0.10-0.20 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
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BOREHOLE: BH43

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH43_0.1-0.2 ES 0.10-0.20 m			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
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This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH44

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH44_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH44_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.4 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH45

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.20	BH45_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm BH45_0.3-0.4 ES 0.30-0.40 m 0.30 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
								CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH46

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.20	BH46_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm BH46_0.3-0.4 ES 0.30-0.40 m 0.30 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
								CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH47_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH48_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH48_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH49_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.9 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH49_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.8 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH50_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	FILL: Gravelly SAND; fine to medium grained, pale brown to brown, with fine to medium grained and sub-angular to angular gravels, no odour.			FILL
				0.40								
					BH50_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH51_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH52_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH53_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH54_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH55_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH56_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.20	BH57_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm BH57_0.3-0.4 ES 0.30-0.40 m 0.30 m PID = 0.3 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
								CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH58_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH58_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH59

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH59_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	FILL: Gravelly SAND; fine to medium grained, pale brown to brown, with fine to medium grained and sub-angular to angular gravels, no odour.			FILL
				0.40								
					BH59_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.4 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH60

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH60_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	FILL: Gravelly SAND; fine to medium grained, pale brown to brown, with fine to medium grained and sub-angular to angular gravels, no odour.			FILL
				0.30								
					BH60_0.4-0.6 ES 0.40-0.50 m 0.40 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH61

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH61_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH61_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH62

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH62_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH62_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH63

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH63_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH63_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH64_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	FILL: Gravelly SAND; fine to medium grained, pale brown to brown, with fine to medium grained and sub-angular to angular gravels, no odour.			FILL
				0.40								
					BH64_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.3 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH65_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH65_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.3 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH66_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
								CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
					BH66_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.4 ppm							
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH67

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH67_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH67_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH68

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH68_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.9 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH68_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.4 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH69

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH69_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.4 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH69_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.5 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH70

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH70_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH70_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH71

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH71_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.5 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH71_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH72

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	24/7/19
Position	Refer to Figure 2			Date Completed	24/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH72_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.4 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH72_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH73

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH73_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH73_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH74

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH74_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.4 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
					BH74_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.2 ppm							
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH75

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH75_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Silty CLAY; low to medium plasticity, brown, no odour.			TOPSOIL
				0.40	BH75_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH76

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH76_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.4 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
					BH76_0.6-0.7 ES 0.60-0.70 m 0.60 m PID = 0.1 ppm							
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH77_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	TOPSOIL: Silty CLAY; low to medium plasticity, brown, no odour.			TOPSOIL
				0.30								
					BH77_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH78

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH78_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.4 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1		BH78_0.8-0.9 ES 0.80-0.90 m 0.80 m PID = 0.4 ppm							
				1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH79

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH79_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.4 ppm			-	TOPSOIL: Silty CLAY; low to medium plasticity, brown, no odour.			TOPSOIL
				0.30								
					BH79_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH80

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH80_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Silty CLAY; low to medium plasticity, brown, no odour.			TOPSOIL
				0.30								
					BH80_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH81

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH81_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH81_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.3 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH82

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH82_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.1 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH82_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH83

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH83_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.5 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30				CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
					BH83_0.6-0.7 ES 0.60-0.70 m 0.60 m PID = 0.2 ppm							
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH84

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH84_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.4 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH84_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH85

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH85_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH85_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH86

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH86_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH86_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH87

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH87_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH87_0.6-0.7 ES 0.60-0.70 m 0.60 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, pale brown, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH88_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH88_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH89_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH89_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH90_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH90_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, pale brown, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH91_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH91_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.4 ppm			CI-CH	Silty CLAY; medium to high plasticity, pale brown, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH92_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH92_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.4 ppm			CI-CH	Silty CLAY; medium to high plasticity, pale red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH93_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.4 ppm			CL-CI	TOPSOIL: 'Silty CLAY; low to medium plasticity, brown, no odour.			TOPSOIL
				0.40								
					BH93_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.5 ppm			CI-CH	Silty CLAY; medium to high plasticity, pale red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH94_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40				CI-CH	Silty CLAY; medium to high plasticity, pale red, no odour.	M	-	RESIDUAL SOIL
			1	1.00	BH94_0.8-0.9 ES 0.80-0.90 m 0.80 m PID = 0.2 ppm				Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	▽	0		BH95_0.1-0.2 ES 0.10-0.20 m 0.1 m PID = 0.2 ppm			CL-CI	TOPSOIL: Silty CLAY; low to medium plasticity, brown, no odour.			TOPSOIL
				0.40	BH95_0.5-0.6 ES 0.50-0.60 m 0.5 m PID = 0.4 ppm			CI-CH	Silty CLAY; medium to high plasticity, pale red, no odour.	M	-	RESIDUAL SOIL
			1	1.10					From 1.1 m, pale brown.			
			2	2.50				CI-CH	Sandy CLAY; medium plasticity, pale brown, with fine to medium grained sand, no odour.			
			3		BH95_3.8-3.9 ES 3.80-3.90 m 3.8 m PID = 0.4 ppm							
			4									
			5	5.00					Hole Terminated at 5.00 m Target Depth Reached.			
			6									

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Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.10	BH96_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.4 ppm			-	FILL: Gravelly SAND; fine to medium grained, pale brown to brown, with fine to medium grained and sub-angular to angular gravels, no odour.			FILL
								-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40	BH96_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.4 ppm			CI-CH	Silty CLAY; medium to high plasticity, pale red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH97_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH97_0.7-0.8 ES 0.70-0.80 m 0.70 m PID = 0.5 ppm			CI-CH	Silty CLAY; medium to high plasticity, pale red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH98_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.4 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH98_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.5 ppm			CI-CH	Silty CLAY; medium to high plasticity, pale red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH99

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH99_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.4 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40								
					BH99_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.3 ppm			CI-CH	Silty CLAY; medium to high plasticity, pale red, no odour.	M	-	RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH100

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH100_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			CL-CI	TOPSOIL: Silty CLAY; low to medium plasticity, brown, no odour.			TOPSOIL
				0.40								
					BH100_0.5-0.6 ES 0.50-0.60 m 0.50 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	D	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH101

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH101_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	FILL: SILT; fines of low to medium plasticity, brown, with trace root fibres, no odour.			TOPSOIL
				0.60						M	-	
			1		BH101_0.7-0.8 ES 0.70-0.80 m 0.70 m PID = 0.4 ppm			CI-CH	Silty CLAY; medium to high plasticity, brown with trace pale red, no odour.			RESIDUAL SOIL
				1.20					Hole Terminated at 1.20 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

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BOREHOLE: BH102

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH102_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: SILT; fines of medium plasticity, pale red, no odour.	M	-	TOPSOIL
				0.70				CI-CH	Silty CLAY; medium to high plasticity, pale red, no odour.			RESIDUAL SOIL
			1		BH102_0.9-1.0 ES 0.90-1.00 m 0.90 m PID = 0.4 ppm							
				1.20					Hole Terminated at 1.20 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH103

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.20	BH103_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	FILL: Silty CLAY; low to medium plasticity, brown, with trace fine grained and sub-angular to angular gravels, with rootlets, no odour.			FILL
								-	FILL: SILT; fines of medium plasticity, pale red, no odour.			
				0.60	BH103_0.6-0.7 ES 0.60-0.70 m 0.60 m PID = 0.2 ppm			CI-CH	Silty CLAY; medium to high plasticity, pale red, no odour.	M	-	RESIDUAL SOIL
			1	1.20					Hole Terminated at 1.20 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH104

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH104_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.40				-	FILL: SILT; fines of medium plasticity, pale red, no odour.	M	-	FILL
				0.80				CI-CH	Silty CLAY; medium to high plasticity, pale red, no odour.			RESIDUAL SOIL
			1		BH104_0.9-1.0 ES 0.90-1.00 m 0.90 m PID = 0.2 ppm							
				1.20					Hole Terminated at 1.20 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH105

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	▽	0	0.20	BH105_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: SILT; fines of low to medium plasticity, brown, with root fibres, no odour.			TOPSOIL
					BH105_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.4 ppm			-	FILL: SILT; fines of medium plasticity, pale red, no odour.			FILL
				0.60				CI-CH	Silty CLAY; medium to high plasticity, pale brown-brown to pale red, no odour.	D - M		RESIDUAL SOIL
			1									
			2									
				2.40					From 2.4 m, pale brown.		-	
			3							M		
			4		BH105_4.0-4.1 ES 4.00-4.10 m 4.00 m PID = 0.4 ppm							
				4.50				-	SHALE; extremely weathered, dark brown, inferred, distinctly weathered, no odour.			BEDROCK
				4.60					Hole Terminated at 4.60 m Refusal.			
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH106

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH106_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH106_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.1 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH107

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH107_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.5 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
				0.30								
					BH107_0.4-0.5 ES 0.40-0.50 m 0.40 m PID = 0.4 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.	M	-	RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH108

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged	JH/EW Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.20	BH108_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.2 ppm			-	TOPSOIL: Sandy SILT; fines of low to medium plasticity, brown, sands fine to medium grained, with trace root fibres, no odour.			TOPSOIL
								M	SILT; fines of medium plasticity, pale red, no odour.			RESIDUAL SOIL
				0.50	BH108_0.6-0.7 ES 0.60-0.70 m 0.60 m PID = 0.3 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange-red, no odour.	M	-	
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH109

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH109_0.1-0.2 ES 0.10-0.20 m 0.10 m PID = 0.4 ppm			CL-CI	TOPSOIL: Silty CLAY; low to medium plasticity, brown, no odour.	M	-	TOPSOIL
				0.50								
					BH109_0.6-0.7 ES 0.60-0.70 m 0.60 m PID = 0.3 ppm			CI-CH	Silty CLAY; medium to high plasticity, orange with red, no odour.			RESIDUAL SOIL
			1	1.00					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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BOREHOLE: BH110

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	859 Mamre Road, Kemps, Creek SW			Date Started	25/7/19
Position	Refer to Figure 2			Date Completed	25/7/19
Job No.	E24287.E02	Contractor	Hartgeo Drilling Pty Ltd	Logged JH/EW	Date:
Client	Malosi Group	Drill Rig	UTE-Mounted Drill Rig	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH110_0.1-0.2 QD2/QT2 0.10-0.20 m 0.10 m PID = 0.3 ppm			-	FILL: Silty SAND; fine to coarse grained, brown with some white, with fine to medium grained and sub-angular to angular gravels, no odour.	M	-	FILL
				0.50								
					BH110_0.6-0.7 ES 0.60-0.70 m 0.60 m PID = 0.4 ppm			CI-CH	Silty CLAY; medium to high plasticity, pale red, no odour.			RESIDUAL SOIL
			1	*1.00*					Hole Terminated at 1.00 m Target Depth Reached.			
			2									
			3									
			4									
			5									
			6									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

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EXPLANATION OF NOTES, ABBREVIATIONS & TERMS USED ON BOREHOLE AND TEST PIT LOGS

DRILLING/EXCAVATION METHOD

HA	Hand Auger	**RD**	Rotary blade or drag bit	**NQ**	Diamond Core - 47 mm
DT	Diatube Coring	**RT**	Rotary Tricone bit	**NMLC**	Diamond Core - 52 mm
NDD	Non-destructive digging	**RAB**	Rotary Air Blast	**HQ**	Diamond Core - 63 mm
AS*	Auger Screwing	**RC**	Reverse Circulation	**HMLC**	Diamond Core - 63 mm
AD*	Auger Drilling	**PT**	Push Tube	**BH**	Tractor Mounted Backhoe
***V**	V-Bit	**CT**	Cable Tool Rig	**EX**	Tracked Hydraulic Excavator
***T**	TC-Bit, e.g. AD/T	**JET**	Jetting	**EE**	Existing Excavation
ADH	Hollow Auger	**WB**	Washbore or Bailer	**HAND**	Excavated by Hand Methods

PENETRATION RESISTANCE

L	**Low Resistance**	Rapid penetration/ excavation possible with little effort from equipment used.
M	**Medium Resistance**	Penetration/ excavation possible at an acceptable rate with moderate effort from equipment used.
H	**High Resistance**	Penetration/ excavation is possible but at a slow rate and requires significant effort from equipment used.
R	**Refusal/Practical Refusal**	No further progress possible without risk of damage or unacceptable wear to equipment used.

These assessments are subjective and are dependent on many factors, including equipment power and weight, condition of excavation or drilling tools and experience of the operator.

WATER

Standing Water Level

Partial water loss

Water Seepage

Complete Water Loss

GWNO	GROUNDWATER NOT OBSERVED - Observation of groundwater, whether present or not, was not possible due to drilling water, surface seepage or cave-in of the borehole/ test pit.
GWNE	GROUNDWATER NOT ENCOUNTERED - Borehole/ test pit was dry soon after excavation. However, groundwater could be present in less permeable strata. Inflow may have been observed had the borehole/ test pit been left open for a longer period.

SAMPLING AND TESTING

SPT	Standard Penetration Test to AS1289.6.3.1-2004
4,7,11 N=18	4,7,11 = Blows per 150mm. N = Blows per 300mm penetration following a 150mm seating drive
30/80mm	Where practical refusal occurs, the blows and penetration for that interval are reported
RW	Penetration occurred under the rod weight only
HW	Penetration occurred under the hammer and rod weight only
HB	Hammer double bouncing on anvil
Sampling	
DS	Disturbed Sample
ES	Sample for environmental testing
BDS	Bulk disturbed Sample
GS	Gas Sample
WS	Water Sample
U50	Thin walled tube sample - number indicates nominal sample diameter in millimetres
Testing	
FP	Field Permeability test over section noted
FVS	Field Vane Shear test expressed as uncorrected shear strength (sv= peak value, sr= residual value)
PID	Photoionisation Detector reading in ppm
PM	Pressuremeter test over section noted
PP	Pocket Penetrometer test expressed as instrument reading in kPa
WPT	Water Pressure tests
DCP	Dynamic Cone Penetrometer test
CPT	Static Cone Penetration test
CPTu	Static Cone Penetration test with pore pressure (u) measurement

ROCK CORE RECOVERY

TCR=Total Core Recovery (%)

$$= \frac{Length\ of\ core\ recovered}{Length\ of\ core\ run} \times 100$$

SCR=Solid Core Recovery (%)

$$= \frac{\sum Length\ of\ cylindrical\ core\ recovered}{Length\ of\ core\ run} \times 100$$

RQD = Rock Quality Designation (%)

$$= \frac{\sum Axial\ lengths\ of\ core > 100mm}{Length\ of\ core\ run} \times 100$$

GEOLOGICAL BOUNDARIES

———— = Observed Boundary (position known)

– – – – – – – – – – = Observed Boundary (position approximate)

– –?– –?– –?– – = Boundary (interpreted or inferred)

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METHOD OF SOIL DESCRIPTION USED ON BOREHOLE AND TEST PIT LOGS

	FILL		ORGANIC SOILS (OL, OH or Pt)		CLAY (CL, CI or CH)
	COUBLES or BOULDERS		SILT (ML or MH)		SAND (SP or SW)
	GRAVEL (GP or GW)	Combinations of these basic symbols may be used to indicate mixed materials such as sandy clay			

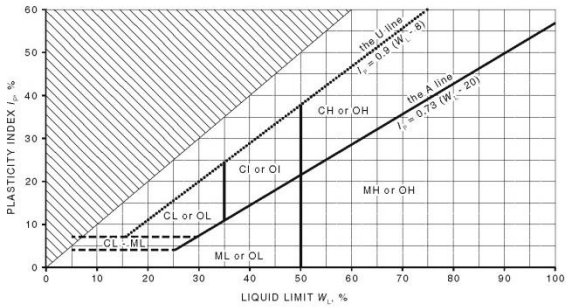
CLASSIFICATION AND INFERRED STRATIGRAPHY

Soil is broadly classified and described in Borehole and Test Pit Logs using the preferred method given in AS 1726:2017, Section 6.1 – Soil description and classification.

PARTICLE SIZE CHARACTERISTICS

Fraction	Components	Sub Division	Size mm
Oversize	BOULDERS		>200
	COBBLES		63 to 200
Coarse grained soil	GRAVEL	Coarse	19 to 63
		Medium	6.7 to 19
		Fine	2.36 to 6.7
	SAND	Coarse	0.6 to 2.36
		Medium	0.21 to 0.6
		Fine	0.075 to 0.21
Fine grained soil	SILT		0.002 to 0.075
	CLAY		<0.002

PLASTICITY PROPERTIES



GROUP SYMBOLS

Major Divisions		Symbol	Description
COARSE GRAINED SOILS More than 65% of soil excluding oversize fraction is greater than 0.075mm	GRAVEL More than 50% of coarse fraction is >2.36mm	GW	Well graded gravel and gravel-sand mixtures, little or no fines.
		GP	Poorly graded gravel and gravel-sand mixtures, little or no fines.
		GM	Silty gravel, gravel-sand-silt mixtures.
		GC	Clayey gravel, gravel-sand-clay mixtures.
	SAND More than 50% of coarse fraction is <2.36 mm	SW	Well graded sand and gravelly sand, little or no fines.
		SP	Poorly graded sand and gravelly sand, little or no fines.
		SM	Silty sand, sand-silt mixtures.
		SC	Clayey sand, sandy-clay mixtures.
FINE GRAINED SOILS More than 35% of soil excluding oversized fraction is less than 0.075mm	Liquid Limit less < 50%	ML	Inorganic silts of low plasticity, very fine sands, rock flour, silty or clayey fine sands.
		CL, CI	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays.
		OL	Organic silts and organic silty clays of low plasticity.
	Liquid Limit > than 50%	MH	Inorganic silts of high plasticity.
		CH	Inorganic clays of high plasticity.
		OH	Organic clays of medium to high plasticity.
	Highly Organic soil	PT	Peat muck and other highly organic soils.

MOISTURE CONDITION

Symbol	Term	Description
D	Dry	Non- cohesive and free-running.
M	Moist	Soils feel cool, darkened in colour. Soil tends to stick together.
W	Wet	Soils feel cool, darkened in colour. Soil tends to stick together, free water forms when handling.

Moisture content of cohesive soils shall be described in relation to plastic limit (PL) or liquid limit (LL) for soils with higher moisture content as follows: Moist, dry of plastic limit (w < PL); Moist, near plastic limit (w ≈ PL); Moist, wet of plastic limit (w < PL); Wet, near liquid limit (w ≈ LL), Wet, wet of liquid limit (w > LL),

CONSISTENCY

Symbol	Term	Undrained Shear Strength (kPa)	SPT "N" #
VS	Very Soft	≤ 12	≤ 2
S	Soft	>12 to ≤ 25	>2 to ≤ 4
F	Firm	>25 to ≤ 50	>4 to 8
St	Stiff	>50 to ≤ 100	>8 to 15
VSt	Very Stiff	>100 to ≤ 200	>15 to 30
H	Hard	>200	>30
Fr	Friable	-	

DENSITY

Symbol	Term	Density Index %	SPT "N" #
VL	Very Loose	≤ 15	0 to 4
L	Loose	>15 to ≤ 35	4 to 10
MD	Medium Dense	>35 to ≤ 65	10 to 30
D	Dense	>65 to ≤ 85	30 to 50
VD	Very Dense	>85	Above 50

In the absence of test results, consistency and density may be assessed from correlations with the observed behaviour of the material.
SPT correlations are not stated in AS1726:2017, and may be subject to corrections for overburden pressure and equipment type.

MINOR COMPONENTS

Term	Assessment Guide	Proportion by Mass
Trace	Presence just detectable by feel or eye but soil properties little or no different to general properties of primary component	Coarse grained soils: ≤ 5% Fine grained soil: ≤ 15%
With	Presence easily detectable by feel or eye but soil properties little or no different to general properties of primary component	Coarse grained soils: 5 - 12% Fine grained soil: 15 - 30%
Prefix	Presence easily detectable by feel or eye in conjunction with the general properties of primary component	Coarse grained soils: >12% Fine grained soil: >30%

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TERMS FOR ROCK MATERIAL STRENGTH AND WEATHERING

CLASSIFICATION AND INFERRED STRATIGRAPHY

Rock is broadly classified and described in Borehole and Test Pit Logs using the preferred method given in AS1726 – 2017, Section 6.2 – Rock identification, description and classification.

ROCK MATERIAL STRENGTH CLASSIFICATION

Symbol	Term	Point Load Index, $Is_{(50)}$ (MPa) #	Field Guide
VL	Very Low	0.03 to 0.1	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 30 mm can be broken by finger pressure.
L	Low	0.1 to 0.3	Easily scored with a knife; indentations 1 mm to 3 mm show in the specimen with firm blows of pick point; has dull sound under hammer. A piece of core 150 mm long by 50 mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
M	Medium	0.3 to 1	Readily scored with a knife; a piece of core 150 mm long by 50 mm diameter can be broken by hand with difficulty.
H	High	1 to 3	A piece of core 150 mm long by 50 mm diameter cannot be broken by hand but can be broken with pick with a single firm blow; rock rings under hammer.
VH	Very High	3 to 10	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
EH	Extremely High	>10	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

 # Rock Strength Test Results

▼ Point Load Strength Index, $Is_{(50)}$, Axial test (MPa)

● Point Load Strength Index, $Is_{(50)}$, Diametral test (MPa)

Relationship between rock strength test result ($Is_{(50)}$) and unconfined compressive strength (UCS) will vary with rock type and strength, and should be determined on a site-specific basis. However UCS is typically 20 x $Is_{(50)}$.

ROCK MATERIAL WEATHERING CLASSIFICATION

Symbol		Term	Field Guide
RS		Residual Soil	Soil developed on extremely weathered rock; the mass structure and substance fabric are no longer evident; there is a large change in volume but the soil has not been significantly transported.
XW		Extremely Weathered	Rock is weathered to such an extent that it has soil properties - i.e. it either disintegrates or can be remoulded, in water.
DW	HW	Distinctly Weathered	Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores. In some environments it is convenient to subdivide into Highly Weathered and Moderately Weathered, with the degree of alteration typically less for MW.
	MW		
SW		Slightly Weathered	Rock slightly discoloured but shows little or no change of strength relative to fresh rock.
FR		Fresh	Rock shows no sign of decomposition or staining.

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ABBREVIATIONS AND DESCRIPTIONS FOR ROCK MATERIAL AND DEFECTS

CLASSIFICATION AND INFERRED STRATIGRAPHY
Rock is broadly classified and described in Borehole and Test Pit Logs using the preferred method given in AS1726 – 2017, Section 6.2 – Rock identification, description and classification.

ROCK MATERIAL DESCRIPTION

Layering	
Term	**Description**
Massive	No layering apparent
Indistinct	Layering just visible; little effect on properties
Distinct	Layering (bedding, foliation, cleavage) distinct; rock breaks more easily parallel to layering

Structure	
Term	**Spacing (mm)**
Thinly laminated	<6
Laminated	6 – 20
Very thinly bedded	20 – 60
Thinly bedded	60 – 200
Medium bedded	200 – 600
Thickly bedded	600 – 2,000
Very thickly bedded	> 2,000

ABBREVIATIONS AND DESCRIPTIONS FOR DEFECT TYPES

Defect Type	Abbr.	Description
Joint	JT	Surface of a fracture or parting, formed without displacement, across which the rock has little or no tensile strength. May be closed or filled by air, water or soil or rock substance, which acts as cement.
Bedding Parting	BP	Surface of fracture or parting, across which the rock has little or no tensile strength, parallel or sub-parallel to layering/ bedding. Bedding refers to the layering or stratification of a rock, indicating orientation during deposition, resulting in planar anisotropy in the rock material.
Foliation	FL	Repetitive planar structure parallel to the shear direction or perpendicular to the direction of higher pressure, especially in metamorphic rock, e.g. Schistosity (SH) and Gneissosity.
Contact	CO	The surface between two types or ages of rock.
Cleavage	CL	Cleavage planes appear as parallel, closely spaced and planar surfaces resulting from mechanical fracturing of rock through deformation or metamorphism, independent of bedding.
Sheared Surface	SSU	A near planar, curved or undulating surface which is usually smooth, polished or slickensided.
Sheared Seam/ Zone (Fault)	SS/SZ	Seam or zone with roughly parallel almost planar boundaries of rock substance cut by closely spaced (often <50 mm) parallel and usually smooth or slickensided joints or cleavage planes.
Crushed Seam/ Zone (Fault)	CS/CZ	Seam or zone composed of disoriented usually angular fragments of the host rock substance, with roughly parallel near-planar boundaries. The brecciated fragments may be of clay, silt, sand or gravel sizes or mixtures of these.
Extremely Weathered Seam/ Zone	XWS/ XWZ	Seam of soil substance, often with gradational boundaries, formed by weathering of the rock material in places.
Infilled Seam	IS	Seam of soil substance, usually clay or clayey, with very distinct roughly parallel boundaries, formed by soil migrating into joint or open cavity.
Schistocity	SH	The foliation in schist or other coarse grained crystalline rock due to the parallel arrangement of platy or prismatic mineral grains, such as mica.
Vein	VN	Distinct sheet-like body of minerals crystallised within rock through typically open-space filling or crack-seal growth.

ABBREVIATIONS AND DESCRIPTIONS FOR DEFECT SHAPE AND ROUGHNESS

Shape	Abbr.	Description	Roughness	Abbr.	Description
Planar	PR	Consistent orientation	Polished	POL	Shiny smooth surface
Curved	CU	Gradual change in orientation	Slickensided	SL	Grooved or striated surface, usually polished
Undulating	UN	Wavy surface	Smooth	SM	Smooth to touch. Few or no surface irregularities
Stepped	ST	One or more well defined steps	Rough	RO	Many small surface irregularities (amplitude generally <1mm). Feels like fine to coarse sandpaper
Irregular	IR	Many sharp changes in orientation	Very Rough	VR	Many large surface irregularities, amplitude generally >1mm. Feels like very coarse sandpaper

Orientation: **Vertical Boreholes –** The dip (inclination from horizontal) of the defect.
Inclined Boreholes – The inclination is measured as the acute angle to the core axis.

ABBREVIATIONS AND DESCRIPTIONS FOR DEFECT COATING

Coating	Abbr.	Description
Clean	CN	No visible coating or infilling
Stain	SN	No visible coating but surfaces are discoloured by staining, often limonite (orange-brown)
Veneer	VNR	A visible coating of soil or mineral substance, usually too thin to measure (< 1 mm); may be patchy

DEFECT APERTURE

Aperture	Abbr.	Description
Closed	-	Closed.
Open	OP	Without any infill material.
Infilled	-	Soil or rock i.e. clay, talc, pyrite, quartz, etc.

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Appendix H – Calibration Documentation

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

EI Australia
Suite 6.01, 55 Miller Street
PYRMONT, NSW, 2009

ABN 33 102 449 507
E service@eiaustralia.com.au
W www.eiaustralia.com.au
T 02 9516 0722

CALIBRATION CERTIFICATE FOR PHOTO IONISATION DETECTOR

Instrument: Mini RAE 3000

Serial Number: 592-906667 - EI **PID02** ☐ **OR** 592-901345 - EI **PID03** ☑

Instrument Conditions: Good.

Calibration gas species: Isobutylene.

Calibration gas concentration: 100 ppm

Gas bottle number: LOT 846344 cyc 16.

This PID has been calibrated to Isobutylene gas with the span concentration displayed as 101 ppm at 100 ppm span setting (allowable range +/-10ppm from span setting).

The PID is initially zero calibrated in fresh air.

Remaining gas in bottle: >250 psi (if reading is <250 psi, notify Equipment Manager to arrange new gas bottle order)

The above detector was calibrated in accordance with manufacturer's specifications.

Signed: Joel Tefinger

Date: 24-07-19

Time: 0700.

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

EI Australia
Suite 6.01, 55 Miller Street
PYRMONT, NSW, 2009

ABN 33 102 449 507
E service@eiaustralia.com.au
W www.eiaustralia.com.au
T 02 9516 0722

CALIBRATION CERTIFICATE FOR PHOTO IONISATION DETECTOR

Instrument: Mini RAE 3000

Serial Number: 592-906667 - EI **PID02** ☐ **OR** 592-901345 - EI **PID03** ☑

Instrument Conditions: Good.

Calibration gas species: Isobutylene.

Calibration gas concentration: 100 ppm

Gas bottle number: HOT 846344 cyl 16.

This PID has been calibrated to Isobutylene gas with the span concentration displayed as 99 ppm at 100 ppm span setting (allowable range +/-10ppm from span setting).

The PID is initially zero calibrated in fresh air.

Remaining gas in bottle: 7250 psi (if reading is <250 psi, notify Equipment Manager to arrange new gas bottle order)

The above detector was calibrated in accordance with manufacturer's specifications.

Signed: Jack Hennigan

Date: 25-07-19

Time: 0730.

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Appendix I – Chain of Custody and Sample Receipt Forms

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Sheet 1 of 1

Site: 859 MAMRE ROAD KEMPS CREEK

Project No: E24287. E02

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

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS				TCLP HM [B] / PAH
QT 1	1	JAR	24/07/19			✓				✓													
QT 2	2	JAR	25/07/19			✓				✓													

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

- [x] Standard
- [ ] 24 Hours
- [ ] ~~48 Hours~~
- [ ] 72 Hours
- [ ] Other_____

ENVIROLAB

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

Job No: 22514

Date Received: 26/7/2019
Time Received: 1406
Received by: PR
Temp: Cool/Ambient
Cooling: Ice/icepack
Security: Intact/Broken/None

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):	Received by (Envirolab)
Print: JOEL HEININGER	Print: PR
Signature:	Signature:
Date: 26-07-19	Date: 26/7/2019 1406

Sampler's Comments:

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

COC March 2018 FORM v.4 - SGS

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

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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	E24287.E02, Kemps Creek
Envirolab Reference	222514
Date Sample Received	26/07/2019
Date Instructions Received	26/07/2019
Date Results Expected to be Reported	02/08/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	2 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	1.2
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:

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

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 ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	Acid Extractable metalsin soil
QT1	✓	✓	✓
QT2	✓	✓	✓

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.

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source: [Untitled].pdf page: 1 SGS Ref: SE195772_COC

E-MAILED 26/7/19 @ 12:47

Sheet 1 of 17

Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	Sample Matrix: SOIL	Sample Matrix: Composite Samples	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	Analysis: HM [A] /TRH/BTEX/PAHs	Analysis: HM [A] /TRH/BTEX	Analysis: BTEX	Analysis: VOCs	Analysis: Asbestos	Analysis: Asbestos Quantification	Analysis: pH / CEC (cation exchange)	Analysis: pH / EC (electrical conductivity)	Analysis: Dewatering Suite	Analysis: sPOCAS	Analysis: PFAS	Analysis: TCLP HM [B] / PAH
BH1_0.1-0.2	1	J 2LB	24/25/7/19			✓		✓												
↓ _0.7-0.8	2	↓	↓			↓			✓											
BH2_0.1-0.2	3						C1													
↓ _0.5-0.6																				
BH3_0.1-0.2	4						C1													
↓ _0.5-0.6																				
BH4_0.2-0.4	5						C1													
↓ _0.9-1.0																				
BH5_0.1-0.2	6						C2													
↓ 6_0.1-0.2	7						C2													
↓ 7_0.1-0.2	8							✓												
↓ ↓ _0.5-0.6		↓	↓			↓														

Comments

HM [A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

SGS EHS Alexandria Laboratory

SE195772 COC
Received: 26 – Jul – 2019

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Einkelders	Signature:
Date: 26/7/19	Date: 26/07/19 @ 12:50

Sampler's Comments:

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 March 2018 FORM v.4 - SGS

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Version: 1, Version Date: 16/12/2019

Sheet 2 of 17

Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM[A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM[A] /TRH/BTEX/PAHs	HM[A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	pH, EC, Sulphate, Chloride	Aggressivity		TCLP HM[B] / PAH
BH8_0.1-0.2	9	JSZLB	24/25/7/19			✓		✓															
↓ _0.5-0.6		↓				↓																	
BH9_0.1-0.2	10						C3																
↓ _0.4-0.5																							
BH10_0.1-0.2	11						C3													✓	✓		
↓ _1-1.1	12																			✓	✓		
BH11_0.1-0.2	13						C4																
↓ _0.3-0.4																							
BH12_0.1-0.2	14						C3																
↓ _0.4-0.5																							
BH13_0.1-0.2	15						C2																
↓ _0.5-0.6		↓				↓																	

Comments

HM[A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM[B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Eichelders	Signature:
Date: 26/7/19	Date: 26/07/19 @ 12:50

Sampler's Comments:

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

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

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

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Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	WATER	SOIL	OTHERS (i.e. Fibro, Paint etc.)	HM[A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM[A] /TRH/BTEX/PAHs	HM[A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS				TCLP HM[B] / PAH
BH14_0.1-0.2	16	ZLB	24/25/7/19			✓		✓														
BH15_0.1-0.2	17	″	″			″		✓														
BH16_0.1-0.2	18	″	″			″	C4															
↓ -0.4-0.5		″	″			″		✓														
BH17_0.1-0.2	19	″	″			″		✓														
↓ -0.3-0.4		″	″			″																
BH18_0.1-0.2	20	″	″			″	C4															
↓ -0.4-0.5		″	″			″																
BH19_0.1-0.2	21	″	″			″		✓														
BH20_0.1-0.2	22	″	″			″		✓														
BH21_0.1-0.2	23	″	″			″		✓														
↓ -0.6-0.7	24	↓	↓			↓			✓													

Comments

HM[A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM[B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Ewelders	Signature:
Date: 26/7/19	Date: 26/07/19 @ 12:50

Sampler's Comments:

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

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PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

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Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM[A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM[A] /TRH/BTEX/PAHs	HM[A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	Hexavalent Chromium			TCLP HM[B] / PAH
BH22_0.1-0.2	25	J/ZLB	24/25/7/19			✓		✓														
↓ -0.3-0.4		↓	↓			↓																
BH23_0.1-0.2	26							✓												✓		
↓ -0.5-0.6																						
BH24_0.1-0.2	27							✓	✓													
↓ -0.5-0.6																						
BH25_0.1-0.2	28						C10															
↓ -0.3-0.4																						
BH26_0.1-0.2	29						C10															
↓ -0.4-0.5																						
BH27_0.1-0.2	30							✓														
↓ -0.4-0.5		↓	↓			↓																

Comments

HM[A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM[B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Eikelders	Signature:
Date: 26/7/19	Date: 26/07/19 @ 12:50

Sampler's Comments:

IMPORTANT:
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Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

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Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	Herbicides			TCLP HM [B] / PAH
BH28_0.1-0.2	31	J&ZLB	24/25/7/19			✓	C9																
↓ -0.4-0.5																							
BH29_0.1-0.2																							
↓ -0.4-0.5	32								✓														
BH30_0.1-0.2	33						C7	✓															
31_	34						C5																
32_	35						C6													✓			
33_	36						C6																
34_	37						C6										—	—		✓			
35_	38						C9																
36_	39						C9																
↓ 37_ ↓	40	↓	↓			✓	C8													✓			

Comments

HM [A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature:	Signature:
Date: 26/7/19	Date: 26/07/19 @ 12:50

Sampler's Comments:

IMPORTANT:
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Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	Sample Matrix: SOIL	Sample Matrix: OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM[A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	Analysis: HM[A] /TRH/BTEX/PAHs	Analysis: HM[A] /TRH/BTEX	Analysis: BTEX	Analysis: VOCs	Analysis: Asbestos	Analysis: Asbestos Quantification	Analysis: pH / CEC (cation exchange)	Analysis: pH / EC (electrical conductivity)	Analysis: Dewatering Suite	Analysis: sPOCAS	Analysis: PFAS	Analysis: Herbicides			Analysis: TCLP HM[B] / PAH
BH38_0.1-0.2	41	JZLB	24/25/7/19			✓	C7																
39_	42						C5												✓				
40_	43						C5																
41_	44						C7																
42_	45						C8																
43_	46						C8																
BH44_0.1-0.2	47						C10																
_0.4-0.5									✓														
BH45_0.1-0.2	48							✓															
_0.3-0.4	49								✓														
BH46_0.1-0.2	50						C12																
_0.3-0.4																							

Comments

HM[A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM[B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Eikelders	Signature:
Date: 26/7/19	Date: 26/07/19 @12:50

Sampler's Comments:

IMPORTANT:
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Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	Sample Matrix: SOIL	Sample Matrix: ~~OTHERS (i.e. Fibro, Paint, etc.)~~	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	Analysis: HM [A] /TRH/BTEX/PAHs	Analysis: HM [A] /TRH/BTEX	Analysis: BTEX	Analysis: VOCs	Analysis: Asbestos	Analysis: Asbestos Quantification	Analysis: pH / CEC (cation exchange)	Analysis: pH / EC (electrical conductivity)	Analysis: Dewatering Suite	Analysis: sPOCAS	Analysis: PFAS	Analysis: Herbicides			Analysis: TCLP HM [B] / PAH
BH47_0.1-0.2	51	J & ZLB	24/25/7/19			✓		✓															
↓ -0.5-0.6		↓	↓			↓																	
BH48_0.1-0.2	52						C11																
↓ -0.5-0.6																							
BH49_0.1-0.2	53						C11																
↓ -0.5-0.6																							
BH50_0.1-0.2	54							✓															
↓ -0.5-0.6																							
BH51_0.1-0.2	55						C11												✓				
↓ 52	56						C13																
53	57						C13																
↓ 54	58	↓	↓			↓	C12																

Comments

HM [A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Eikelders	Signature:
Date: 26/7/19	Date: 26/07/19 @ 12:50

Sampler's Comments:

IMPORTANT:
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Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Sheet 8 of 17

Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM[A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM[A] /TRH/BTEX/PAHs	HM[A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	Herbicides			TCLP HM[B] / PAH
BH55_0.1-0.2	59	J & ZLB	24/25/7/19			✓	C12															
BH56_ ↓	60	↓	↓			↓	C13												✓			
BH57_0.1-0.2	61							✓														
↓ _0.3-0.4																						
BH58_0.1-0.2	62							✓														
↓ _0.4-0.5	63								✓													
BH59_0.1-0.2	64							✓														
↓ _0.5-0.6																						
BH60_0.1-0.2	65						C14															
↓ _0.4-0.5																						
BH61_0.1-0.2	66						C29															
↓ _0.5-0.6		↓	↓			↓																

Comments

HM[A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM[B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Elvelders	Signature:
Date: 26/7/19	Date: 24/07/19 @12:50

Sampler's Comments:

IMPORTANT:
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Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

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Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	Sample Matrix: SOIL	Sample Matrix: OTHER (i.e. Fibro, Paint, etc.)	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	Analysis: HM [A] /TRH/BTEX/PAHs	Analysis: HM [A] /TRH/BTEX	Analysis: BTEX	Analysis: VOCs	Analysis: Asbestos	Analysis: Asbestos Quantification	Analysis: pH / CEC (cation exchange)	Analysis: pH / EC (electrical conductivity)	Analysis: Dewatering Suite	Analysis: sPOCAS	Analysis: PFAS	Analysis:	Analysis:	Analysis:	Analysis: TCLP HM [B] / PAH
BH62_0.1-0.2	67	J&ZLB	24&25/7/19			✓		✓															
↓ -0.5-0.6		↓	↓			↓																	
BH63_0.1-0.2	68						C29																
↓ -0.5-0.6																							
BH64_0.1-0.2	69						C29																
↓ -0.5-0.6																							
BH65_0.1-0.2	70						C15																
↓ -0.5-0.6																							
BH66_0.1-0.2	71						C15																
↓ -0.5-0.6																							
BH67_0.1-0.2	72						C14																
↓ -0.4-0.5		↓	↓			↓																	

Comments

HM [A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Swelders	Signature:
Date: 26/7/19	Date: 26/07/19 @1250

Sampler's Comments:

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

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Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

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Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	SOIL	OTHER (i.e. Fibre, Paint, etc.)	Analysis: HM A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM A /TRH/BTEX/PAHs	HM A /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	Herbicides			TCLP HM B / PAH
BH68_0.1-0.2	73	J/ZLB	24/25/7/19			✓	C14																
↓ -0.4-0.5		↓	↓			↓	↓																
BH69_0.1-0.2	74						C16												✓				
↓ -0.4-0.5																							
BH70_0.1-0.2	75						C16																
↓ -0.4-0.5																							
BH71_0.1-0.2	76						C16												✓				
↓ -0.4-0.5																							
BH72_0.1-0.2	77						C15																
↓ -0.5-0.6	78								✓														
BH73_0.1-0.2	79						C17																
↓ -0.4-0.6		↓	↓			↓	↓																

Comments

HM A
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM B
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Einvelders	Signature:
Date: 26/7/19	Date: 26/07/19 @12:50

Sampler's Comments:

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

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Sheet 11 of 17

Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS				TCLP HM [B] / PAH
BH74_0.1-0.2	80	J ZLB	24/25/7/19			✓	C17															
↓ -0.5-0.6																						
BH75_0.1-0.2	81						C17															
↓ -0.4-0.5																						
BH76_0.1-0.2	82						C18															
↓ -0.6-0.7																						
BH77_0.1-0.2	83						C18															
↓ -0.4-0.5																						
BH78_0.1-0.2	84						C18															
↓ -0.8-0.9																						
BH79_0.1-0.2	85						C19															
↓ -0.4-0.5		✓	✓			✓																

Comments

HM [A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Eiwelders	Signature:
Date: 26/7/19	Date: 26/07/19 @12:50

Sampler's Comments:

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

eiaustralia
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lab@eiaustralia.com.au

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Sheet 12 of 17

Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS				TCLP HM [B] / PAH
BH80_0.1-0.2	86	J3ZLB	24/25/7/19			✓	C19																
↓ _0.4-0.5																							
BH81_0.1-0.2	87						C19																
↓ ~~0.4~~-0.5																							
BH82_0.1-0.2	88						C20																
↓ _0.4-0.5	89								✓														
BH83_0.1-0.2	90						C20																
↓ _0.6-0.7																							
BH84_0.1-0.2	91						C20																
↓ _0.5-0.6																							
BH85_0.1-0.2	92						C21																
↓ _0.5-0.6		↓	↓			↓																	

Comments

HM [A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Einfelders	Signature:
Date: 26/7/19	Date: 26/07/19 @ 12:50

Sampler's Comments:

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

eiaustralia
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PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

COC March 2018 FORM v.4 - SGS

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Sheet 13 of 17

Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	SOIL	OTHERS (i.e. FIBRO, Paint, etc.)	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS				TCLP HM [B] / PAH
BH86_0.1-0.2	93	J/ZLB	24/25/7/19			✓	C21																
↓ _0.5-0.6																							
BH87_0.1-0.2	94						C21																
↓ _0.6-0.7																							
BH88_0.1-0.2	95						C23																
↓ _0.4-0.5																							
BH89_0.1-0.2	96						C24																
↓ _0.5-0.6																							
BH90_0.1-0.2	97							✓															
↓ _0.5-0.6																							
BH91_0.1-0.2	98						C22	✓															
↓ _0.5-0.6																							

Comments

HM [A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Einvelders	Signature:
Date: 26/7/19	Date: 26/07/19 @ 12:50

Sampler's Comments:

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

eiaustralia
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PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Sheet 14 of 17

Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fluro, Paint, etc)	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	pH, EC, sulphate, chloride	Reactivity		TCLP HM [B] / PAH
BH92_0.1-0.2	99	J ZLB	24/25/7/19			✓	C26																
↓ _0.5-0.6																							
BH93_0.1-0.2	100						C25																
↓ _0.5-0.6																							
BH94_0.1-0.2	101						C25																
↓ _0.8-0.9																							
BH95_0.1-0.2	102						C24													✓	✓		
↓ _0.5-0.6	103																			✓	✓		
↓ _3.8-3.9	104																			✓	✓		
BH96_0.1-0.2	105						C23																
↓ _0.5-0.6																							
BH97_0.1-0.2	106	↓	↓			↓	C23																

Comments

HM [A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Ewelders	Signature:
Date: 26/7/19	Date: 26/07/19 @ 1250

Sampler's Comments:

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 March 2018 FORM v.4 - SGS

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Sheet 15 of 17

Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	SOIL	~~OTHERS (i.e. Fibro, Paint, etc)~~	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS				TCLP HM [B] / PAH
BH98_0.1-0.2	107	J&ZLB	24/25/7/19			✓	C24																
↓ -0.5-0.6																							
BH99_0.1-0.2	108						C26																
↓ -0.5-0.6																							
BH100_0.1-0.2	109						C26																
↓ -0.5-0.6																							
BH101_0.1-0.2	110						C27																
↓ -0.7-0.8	111								✓														
BH102_0.1-0.2	112						C27																
↓ -0.9-1.0								✓															
BH103_0.1-0.2	113																						
↓ -0.9-1.0																							

Comments

HM [A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [X] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Eikelders	Signature:
Date: 26/7/19	Date: 26/07/19 @ 12:50

Sampler's Comments:

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

eiaustralia
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Ph: 9516 0722
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Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Sheet 16 of 17

Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	SOIL	OTHER? (i.e. Fibre, Paint, etc.)	HM[A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM[A] /TRH/BTEX/PAHs	HM[A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	Sulphate, chloride, pH, EC	Salinity		TCLP HM[B] / PAH
BH104_0.1-0.2	114	J/S/ZLB	24/25/7/19			✓	C27																
↓ _0.9-1.0																							
BH105_0.1-0.2	115						C28													✓	✓		
↓ _0.4-0.5	116																			↓	↓		
↓ _1-1.1	117																			↓	↓		
BH106_0.1-0.2	118						C28																
↓ _0.7-0.8								✓															
BH107_0.1-0.2	119																						
↓ _0.4-0.5																							
BH108_0.1-0.2	120						C28																
↓ _0.6-0.7	121								✓														
BH109_0.1-0.2	122	✓	✓			✓	C25																

Analysis

Comments

HM[A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM[B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature: Einwelders	Signature:
Date: 26/7/19	Date: 26/07/19 @ 12:50

Sampler's Comments:

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

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Suite 6.01, 55 Miller Street,
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lab@eiaustralia.com.au

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

Sheet 17 of 17

Site: 859 Mamre Rd, Kemps Creek

Project No: E24287

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	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM[A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM[A] /TRH/BTEX/PAHs	HM[A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	HM[A] - OPP/PCP			TCLP HM[B] / PAH
BH109_0.6-0.7		J|2LB	24|25/7/19																			
BH110_0.1-0.2	123	↓						✓														
_0.6-0.7	124	↓							✓													
QD1	125	J								✓												
QD2	126	J								✓												
QR1	127	S, P, VC								✓												
TripBlank	128	VC									✓											
BH97_0.7-0.8		J																				
* C1-C29 *	129-157	J|2LB																	✓			
ASB1	158	ZLB											✓									
		✓																				

Comments

HM[A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM[B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

LABORATORY TURNAROUND

- [x] 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):	Received by (SGS):
Print: EW / JH	Print: Suba
Signature:	Signature:
Date: 26/7/19	Date: 26/07/19 @ 1200

Sampler's Comments:
* Composite samples

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 March 2016 FORM v.4 - SGS

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

SAMPLE RECEIPT ADVICE

SE195772

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	**E24287 859 Mamre Rd Kemps Creek**
Order Number	**E24287**
Samples	158

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 26/7/2019
Report Due	Fri 9/8/2019
SGS Reference	**SE195772**

SUBMISSION DETAILS

This is to confirm that 158 samples were received on Friday 26/7/2019. Results are expected to be ready by COB Friday 9/8/2019. Please quote SGS reference SE195772 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	156 Soil, 1 Water, 1 Materia
Date documentation received	26/7/2019	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	6.5°C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

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

COMMENTS

Acid Herbicides subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420. Results may be delayed.
C22 not listed.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

SAMPLE RECEIPT ADVICE

SE195772

CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Soluble Anions (1:5) in Soil by Ion Chromatography	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	BH1_0.1-0.2	29	14	26	11	-	10	11	7
002	BH1_0.7-0.8	-	-	26	-	-	10	11	7
008	BH7_0.1-0.2	29	14	26	11	-	10	11	7
009	BH8_0.1-0.2	29	14	26	11	-	10	11	7
011	BH10_0.1-0.2	-	-	-	-	2	-	-	-
012	BH10_1-1.1	-	-	-	-	2	-	-	-
016	BH14_0.1-0.2	29	14	26	11	-	10	11	7
017	BH15_0.1-0.2	29	14	26	11	-	10	11	7
019	BH17_0.1-0.2	29	14	26	11	-	10	11	7
021	BH19_0.1-0.2	29	14	26	11	-	10	11	7
022	BH20_0.1-0.2	29	14	26	11	-	10	11	7
023	BH21_0.1-0.2	29	14	26	11	-	10	11	7
024	BH21_0.6-0.7	-	-	26	-	-	10	11	7

CONTINUED OVERLEAF

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

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

SAMPLE RECEIPT ADVICE

SE195772

CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
025	BH22_0.1-0.2	29	14	26	11	10	11	7
026	BH23_0.1-0.2	29	14	26	11	10	11	7
027	BH24_0.1-0.2	29	14	26	11	10	11	7
030	BH27_0.1-0.2	29	14	26	11	10	11	7
032	BH29_0.4-0.5	-	-	26	-	10	11	7
033	BH30_0.1-0.2	29	14	26	11	10	11	7
048	BH45_0.1-0.2	29	14	26	11	10	11	7

CONTINUED OVERLEAF

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SAMPLE RECEIPT ADVICE

SE195772

CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
049	BH45_0.3-0.4	-	-	26	-	10	11	7
051	BH47_0.1-0.2	29	14	26	11	10	11	7
054	BH50_0.1-0.2	29	14	26	11	10	11	7
061	BH57_0.1-0.2	29	14	26	11	10	11	7
062	BH58_0.1-0.2	29	14	26	11	10	11	7
063	BH58_0.4-0.5	-	-	26	-	10	11	7
064	BH59_0.1-0.2	29	14	26	11	10	11	7
067	BH62_0.1-0.2	29	14	26	11	10	11	7

CONTINUED OVERLEAF

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
078	BH72_0.5-0.6	26	10	11	7
089	BH82_0.4-0.5	26	10	11	7

CONTINUED OVERLEAF

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Soluble Anions (1:5) in Soil by Ion Chromatography	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
097	BH90_0.1-0.2	29	14	26	11	-	10	11	7
098	BH91_0.1-0.2	29	14	26	11	-	10	11	7
102	BH95_0.1-0.2	-	-	-	-	2	-	-	-
103	BH95_0.5-0.6	-	-	-	-	2	-	-	-
104	BH95_3.8-3.9	-	-	-	-	2	-	-	-
111	BH101_0.7-0.8	-	-	26	-	-	10	11	7
113	BH103_0.1-0.2	29	14	26	11	-	10	11	7
115	BH105_0.1-0.2	-	-	-	-	2	-	-	-
116	BH105_0.4-0.5	-	-	-	-	2	-	-	-
117	BH105_4-0-4.1	-	-	-	-	2	-	-	-
119	BH107_0.1-0.2	29	14	26	11	-	10	11	7

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
121	BH108_0.6-0.7	-	-	26	-	10	11	7
123	BH110_0.1-0.2	29	14	26	11	10	11	7
124	BH110_0.6-0.7	-	-	26	-	10	11	7
125	QD1	-	-	-	-	10	11	7
126	QD2	-	-	-	-	10	11	7
128	TRIP BLANK	-	-	-	-	-	11	7
129	C1	29	14	-	-	-	-	-
130	C2	29	14	-	-	-	-	-
131	C3	29	14	-	-	-	-	-
132	C4	29	14	-	-	-	-	-
133	C5	29	14	-	-	-	-	-
134	C6	29	14	-	-	-	-	-
135	C7	29	14	-	-	-	-	-
136	C8	29	14	-	-	-	-	-
137	C9	29	14	-	-	-	-	-
138	C10	29	14	-	-	-	-	-
139	C11	29	14	-	-	-	-	-
140	C12	29	14	-	-	-	-	-
141	C13	29	14	-	-	-	-	-
142	C14	29	14	-	-	-	-	-
143	C15	29	14	-	-	-	-	-
144	C16	29	14	-	-	-	-	-

CONTINUED OVERLEAF

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil
145	C17	29	14
146	C18	29	14
147	C19	29	14
148	C20	29	14
149	C21	29	14
151	C23	29	14
152	C24	29	14
153	C25	29	14
154	C26	29	14
155	C27	29	14
156	C28	29	14
157	C29	29	14

CONTINUED OVERLEAF

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SAMPLE RECEIPT ADVICE

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	Exchangeable Cations and Cation Exchange Capacity	Mercury in Soil	Moisture Content	pH in soil (1:5)	Total Recoverable Elements in Soil/Waste
001	BH1_0.1-0.2	-	-	1	1	-	7
002	BH1_0.7-0.8	-	-	1	1	-	7
008	BH7_0.1-0.2	-	-	1	1	-	7
009	BH8_0.1-0.2	-	-	1	1	-	7
011	BH10_0.1-0.2	2	13	-	1	1	-
012	BH10_1-1.1	2	13	-	1	1	-
016	BH14_0.1-0.2	-	-	1	1	-	7
017	BH15_0.1-0.2	-	-	1	1	-	7
019	BH17_0.1-0.2	-	-	1	1	-	7
021	BH19_0.1-0.2	-	-	1	1	-	7
022	BH20_0.1-0.2	-	-	1	1	-	7
023	BH21_0.1-0.2	-	-	1	1	-	7
024	BH21_0.6-0.7	-	-	1	1	-	7

CONTINUED OVERLEAF

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in Soil	Moisture Content	Total Recoverable Elements in Soil/Waste
025	BH22_0.1-0.2	1	1	7
026	BH23_0.1-0.2	1	1	7
027	BH24_0.1-0.2	1	1	7
030	BH27_0.1-0.2	1	1	7
032	BH29_0.4-0.5	1	1	7
033	BH30_0.1-0.2	1	1	7
048	BH45_0.1-0.2	1	1	7

CONTINUED OVERLEAF

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CLIENT DETAILS

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Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in Soil	Moisture Content	Total Recoverable Elements in Soil/Waste
049	BH45_0.3-0.4	1	1	7
051	BH47_0.1-0.2	1	1	7
054	BH50_0.1-0.2	1	1	7
061	BH57_0.1-0.2	1	1	7
062	BH58_0.1-0.2	1	1	7
063	BH58_0.4-0.5	1	1	7
064	BH59_0.1-0.2	1	1	7
067	BH62_0.1-0.2	1	1	7

CONTINUED OVERLEAF

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Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in Soil	Moisture Content	Total Recoverable Elements in Soil/Waste
078	BH72_0.5-0.6	1	1	7
089	BH82_0.4-0.5	1	1	7

CONTINUED OVERLEAF

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	Exchangeable Cations and Cation Exchange Capacity	Mercury in Soil	Moisture Content	pH in soil (1:5)	Total Recoverable Elements in Soil/Waste
097	BH90_0.1-0.2	-	-	1	1	-	7
098	BH91_0.1-0.2	-	-	1	1	-	7
102	BH95_0.1-0.2	2	13	-	1	1	-
103	BH95_0.5-0.6	2	13	-	1	1	-
104	BH95_3.8-3.9	2	13	-	1	1	-
111	BH101_0.7-0.8	-	-	1	1	-	7
113	BH103_0.1-0.2	-	-	1	1	-	7
115	BH105_0.1-0.2	2	13	-	1	1	-
116	BH105_0.4-0.5	2	13	-	1	1	-
117	BH105_4-0-4.1	2	13	-	1	1	-
119	BH107_0.1-0.2	-	-	1	1	-	7

CONTINUED OVERLEAF

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in Soil	Moisture Content	Total Recoverable Elements in Soil/Waste
121	BH108_0.6-0.7	1	1	7
123	BH110_0.1-0.2	1	1	7
124	BH110_0.6-0.7	1	1	7
125	QD1	1	1	7
126	QD2	1	1	7
128	TRIP BLANK	-	1	-
129	C1	1	1	7
130	C2	1	1	7
131	C3	1	1	7
132	C4	1	1	7
133	C5	1	1	7
134	C6	1	1	7
135	C7	1	1	7
136	C8	1	1	7
137	C9	1	1	7
138	C10	1	1	7
139	C11	1	1	7
140	C12	1	1	7
141	C13	1	1	7
142	C14	1	1	7
143	C15	1	1	7
144	C16	1	1	7

CONTINUED OVERLEAF

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in Soil	Moisture Content	Total Recoverable Elements in Soil/Waste
145	C17	1	1	7
146	C18	1	1	7
147	C19	1	1	7
148	C20	1	1	7
149	C21	1	1	7
151	C23	1	1	7
152	C24	1	1	7
153	C25	1	1	7
154	C26	1	1	7
155	C27	1	1	7
156	C28	1	1	7
157	C29	1	1	7

CONTINUED OVERLEAF

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SAMPLE RECEIPT ADVICE

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil
001	BH1_0.1-0.2	2
008	BH7_0.1-0.2	2
009	BH8_0.1-0.2	2
016	BH14_0.1-0.2	2
017	BH15_0.1-0.2	2
019	BH17_0.1-0.2	2
021	BH19_0.1-0.2	2
022	BH20_0.1-0.2	2
023	BH21_0.1-0.2	2

CONTINUED OVERLEAF

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil
025	BH22_0.1-0.2	2
026	BH23_0.1-0.2	2
027	BH24_0.1-0.2	2
030	BH27_0.1-0.2	2
033	BH30_0.1-0.2	2
048	BH45_0.1-0.2	2

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil
051	BH47_0.1-0.2	2
054	BH50_0.1-0.2	2
061	BH57_0.1-0.2	2
062	BH58_0.1-0.2	2
064	BH59_0.1-0.2	2
067	BH62_0.1-0.2	2

CONTINUED OVERLEAF

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil
097	BH90_0.1-0.2	2
098	BH91_0.1-0.2	2
119	BH107_0.1-0.2	2

CONTINUED OVERLEAF

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil
123	BH110_0.1-0.2	2

CONTINUED OVERLEAF

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SAMPLE RECEIPT ADVICE

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre ID in bulk materials
158	ASB1	1

CONTINUED OVERLEAF

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SAMPLE RECEIPT ADVICE

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Sample Subcontracted
026	BH23_0.1-0.2	1
035	BH32_0.1-0.2	1
037	BH34_0.1-0.2	1
040	BH37_0.1-0.2	1
042	BH39_0.1-0.2	1

CONTINUED OVERLEAF

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Sample Subcontracted
056	BH52_0.1-0.2	1
060	BH56_0.1-0.2	1

CONTINUED OVERLEAF

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

SUMMARY OF ANALYSIS

No.	Sample ID	Sample Subcontracted
074	BH69_0.1-0.2	1
076	BH71_0.1-0.2	1

CONTINUED OVERLEAF

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CLIENT DETAILS

Client EI AUSTRALIA

Project E24287 859 Mamre Rd Kemps Creek

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
127	QR1	1	7	10	11	7

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Appendix J – Laboratory Analytical Reports

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

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

CERTIFICATE OF ANALYSIS 222514

Client Details

Client	EI Australia
Attention	Joel Heininger
Address	Suite 6.01, 55 Miller Street, Pyrmont, NSW, 2009

Sample Details

Your Reference	**E24287.E02, Kemps Creek**
Number of Samples	2 Soil
Date samples received	26/07/2019
Date completed instructions received	26/07/2019

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

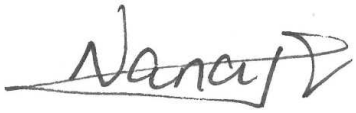
Date results requested by	02/08/2019
Date of Issue	01/08/2019

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Jaimie Loa-Kum-Cheung, Metals Supervisor
Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		222514-1	222514-2
Your Reference	UNITS	QT1	QT2
Date Sampled		24/07/2019	25/07/2019
Type of sample		Soil	Soil
Date extracted	-	29/07/2019	29/07/2019
Date analysed	-	30/07/2019	30/07/2019
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<3	<3
Surrogate aaa-Trifluorotoluene	%	81	82

svTRH (C10-C40) in Soil			
Our Reference		222514-1	222514-2
Your Reference	UNITS	QT1	QT2
Date Sampled		24/07/2019	25/07/2019
Type of sample		Soil	Soil
Date extracted	-	29/07/2019	29/07/2019
Date analysed	-	30/07/2019	30/07/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	84	82

Acid Extractable metals in soil			
Our Reference		222514-1	222514-2
Your Reference	UNITS	QT1	QT2
Date Sampled		24/07/2019	25/07/2019
Type of sample		Soil	Soil
Date prepared	-	29/07/2019	29/07/2019
Date analysed	-	29/07/2019	29/07/2019
Arsenic	mg/kg	8	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	17	11
Copper	mg/kg	33	8
Lead	mg/kg	89	15
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	12	5
Zinc	mg/kg	240	470

Moisture			
Our Reference		222514-1	222514-2
Your Reference	UNITS	QT1	QT2
Date Sampled		24/07/2019	25/07/2019
Type of sample		Soil	Soil
Date prepared	-	29/07/2019	29/07/2019
Date analysed	-	30/07/2019	30/07/2019
Moisture	%	14	11

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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-003	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-003	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-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	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-016	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-5	[NT]
Date extracted	-			29/07/2019	[NT]	[NT]	[NT]	[NT]	29/07/2019	[NT]
Date analysed	-			30/07/2019	[NT]	[NT]	[NT]	[NT]	30/07/2019	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	82	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	82	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	[NT]	[NT]	96	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	[NT]	[NT]	82	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	79	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	77	[NT]
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	76	[NT]
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	88	[NT]	[NT]	[NT]	[NT]	88	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			29/07/2019	[NT]	[NT]	[NT]	[NT]	29/07/2019	[NT]
Date analysed	-			30/07/2019	[NT]	[NT]	[NT]	[NT]	30/07/2019	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	92	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	92	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-003	86	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date prepared	-			29/07/2019	[NT]	[NT]	[NT]	[NT]	29/07/2019	[NT]
Date analysed	-			29/07/2019	[NT]	[NT]	[NT]	[NT]	29/07/2019	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	100	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	105	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	99	[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.

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; 60-140% for organics (+/-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.

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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Joel Heininger
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Project	**E24287 859 Mamre Rd Kemps Creek**
Order Number	**E24287**
Samples	158

LABORATORY DETAILS

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Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE195772 R0**
Date Received	26/7/2019
Date Reported	8/8/2019

COMMENTS

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

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

Asbestos analysed by Approved Identifiers Yusuf Kuthpudin and Ravee Sivasubramaniam .
Acid Herbicides subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420. Report number ME311375

SIGNATORIES

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Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

VOC's in Soil [AN433] Tested: 30/7/2019

PARAMETER	UOM	LOR	BH1_0.1-0.2 SOIL - 24/7/2019 SE195772.001	BH1_0.7-0.8 SOIL - 24/7/2019 SE195772.002	BH7_0.1-0.2 SOIL - 24/7/2019 SE195772.008	BH8_0.1-0.2 SOIL - 24/7/2019 SE195772.009	BH14_0.1-0.2 SOIL - 24/7/2019 SE195772.016
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
Naphthalene	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

PARAMETER	UOM	LOR	BH15_0.1-0.2 SOIL - 24/7/2019 SE195772.017	BH17_0.1-0.2 SOIL - 24/7/2019 SE195772.019	BH19_0.1-0.2 SOIL - 24/7/2019 SE195772.021	BH20_0.1-0.2 SOIL - 24/7/2019 SE195772.022	BH21_0.1-0.2 SOIL - 24/7/2019 SE195772.023
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
Naphthalene	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

PARAMETER	UOM	LOR	BH21_0.6-0.7 SOIL - 24/7/2019 SE195772.024	BH22_0.1-0.2 SOIL - 24/7/2019 SE195772.025	BH23_0.1-0.2 SOIL - 24/7/2019 SE195772.026	BH24_0.1-0.2 SOIL - 24/7/2019 SE195772.027	BH27_0.1-0.2 SOIL - 24/7/2019 SE195772.030
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Naphthalene	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

PARAMETER	UOM	LOR	BH29_0.4-0.5 SOIL - 24/7/2019 SE195772.032	BH30_0.1-0.2 SOIL - 24/7/2019 SE195772.033	BH45_0.1-0.2 SOIL - 24/7/2019 SE195772.048	BH45_0.3-0.4 SOIL - 24/7/2019 SE195772.049	BH47_0.1-0.2 SOIL - 24/7/2019 SE195772.051
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
Naphthalene	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

VOC's in Soil [AN433] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH50_0.1-0.2 SOIL - 24/7/2019 SE195772.054	BH57_0.1-0.2 SOIL - 24/7/2019 SE195772.061	BH58_0.1-0.2 SOIL - 24/7/2019 SE195772.062	BH58_0.4-0.5 SOIL - 24/7/2019 SE195772.063	BH59_0.1-0.2 SOIL - 24/7/2019 SE195772.064
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
Naphthalene	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

PARAMETER	UOM	LOR	BH62_0.1-0.2 SOIL - 25/7/2019 SE195772.067	BH72_0.5-0.6 SOIL - 25/7/2019 SE195772.078	BH82_0.4-0.5 SOIL - 25/7/2019 SE195772.089	BH90_0.1-0.2 SOIL - 25/7/2019 SE195772.097	BH91_0.1-0.2 SOIL - 25/7/2019 SE195772.098
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
Naphthalene	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

PARAMETER	UOM	LOR	BH101_0.7-0.8 SOIL - 25/7/2019 SE195772.111	BH103_0.1-0.2 SOIL - 25/7/2019 SE195772.113	BH107_0.1-0.2 SOIL - 25/7/2019 SE195772.119	BH108_0.6-0.7 SOIL - 25/7/2019 SE195772.121	BH110_0.1-0.2 SOIL - 25/7/2019 SE195772.123
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
Naphthalene	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

PARAMETER	UOM	LOR	BH110_0.6-0.7 SOIL - 25/7/2019 SE195772.124	QD1 SOIL - 24/7/2019 SE195772.125	QD2 SOIL - 25/7/2019 SE195772.126	TRIP BLANK SOIL - 24/7/2019 SE195772.128
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6

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Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 30/7/2019

PARAMETER	UOM	LOR	BH1_0.1-0.2 SOIL - 24/7/2019 SE195772.001	BH1_0.7-0.8 SOIL - 24/7/2019 SE195772.002	BH7_0.1-0.2 SOIL - 24/7/2019 SE195772.008	BH8_0.1-0.2 SOIL - 24/7/2019 SE195772.009	BH14_0.1-0.2 SOIL - 24/7/2019 SE195772.016
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	BH15_0.1-0.2 SOIL - 24/7/2019 SE195772.017	BH17_0.1-0.2 SOIL - 24/7/2019 SE195772.019	BH19_0.1-0.2 SOIL - 24/7/2019 SE195772.021	BH20_0.1-0.2 SOIL - 24/7/2019 SE195772.022	BH21_0.1-0.2 SOIL - 24/7/2019 SE195772.023
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	BH21_0.6-0.7 SOIL - 24/7/2019 SE195772.024	BH22_0.1-0.2 SOIL - 24/7/2019 SE195772.025	BH23_0.1-0.2 SOIL - 24/7/2019 SE195772.026	BH24_0.1-0.2 SOIL - 24/7/2019 SE195772.027	BH27_0.1-0.2 SOIL - 24/7/2019 SE195772.030
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH29_0.4-0.5 SOIL - 24/7/2019 SE195772.032	BH30_0.1-0.2 SOIL - 24/7/2019 SE195772.033	BH45_0.1-0.2 SOIL - 24/7/2019 SE195772.048	BH45_0.3-0.4 SOIL - 24/7/2019 SE195772.049	BH47_0.1-0.2 SOIL - 24/7/2019 SE195772.051
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	BH50_0.1-0.2 SOIL - 24/7/2019 SE195772.054	BH57_0.1-0.2 SOIL - 24/7/2019 SE195772.061	BH58_0.1-0.2 SOIL - 24/7/2019 SE195772.062	BH58_0.4-0.5 SOIL - 24/7/2019 SE195772.063	BH59_0.1-0.2 SOIL - 24/7/2019 SE195772.064
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	BH62_0.1-0.2 SOIL - 25/7/2019 SE195772.067	BH72_0.5-0.6 SOIL - 25/7/2019 SE195772.078	BH82_0.4-0.5 SOIL - 25/7/2019 SE195772.089	BH90_0.1-0.2 SOIL - 25/7/2019 SE195772.097	BH91_0.1-0.2 SOIL - 25/7/2019 SE195772.098
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH101_0.7-0.8 SOIL - 25/7/2019 SE195772.111	BH103_0.1-0.2 SOIL - 25/7/2019 SE195772.113	BH107_0.1-0.2 SOIL - 25/7/2019 SE195772.119	BH108_0.6-0.7 SOIL - 25/7/2019 SE195772.121	BH110_0.1-0.2 SOIL - 25/7/2019 SE195772.123
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	BH110_0.6-0.7 SOIL - 25/7/2019 SE195772.124	QD1 SOIL - 24/7/2019 SE195772.125	QD2 SOIL - 25/7/2019 SE195772.126	TRIP BLANK SOIL - 24/7/2019 SE195772.128
TRH C6-C9	mg/kg	20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 30/7/2019

PARAMETER	UOM	LOR	BH1_0.1-0.2 SOIL - 24/7/2019 SE195772.001	BH1_0.7-0.8 SOIL - 24/7/2019 SE195772.002	BH7_0.1-0.2 SOIL - 24/7/2019 SE195772.008	BH8_0.1-0.2 SOIL - 24/7/2019 SE195772.009	BH14_0.1-0.2 SOIL - 24/7/2019 SE195772.016
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	BH15_0.1-0.2 SOIL - 24/7/2019 SE195772.017	BH17_0.1-0.2 SOIL - 24/7/2019 SE195772.019	BH19_0.1-0.2 SOIL - 24/7/2019 SE195772.021	BH20_0.1-0.2 SOIL - 24/7/2019 SE195772.022	BH21_0.1-0.2 SOIL - 24/7/2019 SE195772.023
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	BH21_0.6-0.7 SOIL - 24/7/2019 SE195772.024	BH22_0.1-0.2 SOIL - 24/7/2019 SE195772.025	BH23_0.1-0.2 SOIL - 24/7/2019 SE195772.026	BH24_0.1-0.2 SOIL - 24/7/2019 SE195772.027	BH27_0.1-0.2 SOIL - 24/7/2019 SE195772.030
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH29_0.4-0.5 SOIL - 24/7/2019 SE195772.032	BH30_0.1-0.2 SOIL - 24/7/2019 SE195772.033	BH45_0.1-0.2 SOIL - 24/7/2019 SE195772.048	BH45_0.3-0.4 SOIL - 24/7/2019 SE195772.049	BH47_0.1-0.2 SOIL - 24/7/2019 SE195772.051
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH50_0.1-0.2 SOIL - 24/7/2019 SE195772.054	BH57_0.1-0.2 SOIL - 24/7/2019 SE195772.061	BH58_0.1-0.2 SOIL - 24/7/2019 SE195772.062	BH58_0.4-0.5 SOIL - 24/7/2019 SE195772.063	BH59_0.1-0.2 SOIL - 24/7/2019 SE195772.064
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	BH62_0.1-0.2 SOIL - 25/7/2019 SE195772.067	BH72_0.5-0.6 SOIL - 25/7/2019 SE195772.078	BH82_0.4-0.5 SOIL - 25/7/2019 SE195772.089	BH90_0.1-0.2 SOIL - 25/7/2019 SE195772.097	BH91_0.1-0.2 SOIL - 25/7/2019 SE195772.098
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: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH101_0.7-0.8 SOIL - 25/7/2019 SE195772.111	BH103_0.1-0.2 SOIL - 25/7/2019 SE195772.113	BH107_0.1-0.2 SOIL - 25/7/2019 SE195772.119	BH108_0.6-0.7 SOIL - 25/7/2019 SE195772.121	BH110_0.1-0.2 SOIL - 25/7/2019 SE195772.123
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	BH110_0.6-0.7 SOIL - 25/7/2019 SE195772.124	QD1 SOIL - 24/7/2019 SE195772.125	QD2 SOIL - 25/7/2019 SE195772.126
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: 30/7/2019

PARAMETER	UOM	LOR	BH1_0.1-0.2 SOIL - 24/7/2019 SE195772.001	BH1_0.7-0.8 SOIL - 24/7/2019 SE195772.002	BH7_0.1-0.2 SOIL - 24/7/2019 SE195772.008	BH8_0.1-0.2 SOIL - 24/7/2019 SE195772.009	BH14_0.1-0.2 SOIL - 24/7/2019 SE195772.016
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	BH15_0.1-0.2 SOIL - 24/7/2019 SE195772.017	BH17_0.1-0.2 SOIL - 24/7/2019 SE195772.019	BH19_0.1-0.2 SOIL - 24/7/2019 SE195772.021	BH20_0.1-0.2 SOIL - 24/7/2019 SE195772.022	BH21_0.1-0.2 SOIL - 24/7/2019 SE195772.023
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: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH21_0.6-0.7 SOIL - 24/7/2019 SE195772.024	BH22_0.1-0.2 SOIL - 24/7/2019 SE195772.025	BH23_0.1-0.2 SOIL - 24/7/2019 SE195772.026	BH24_0.1-0.2 SOIL - 24/7/2019 SE195772.027	BH27_0.1-0.2 SOIL - 24/7/2019 SE195772.030
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	**0.6**	**0.1**	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	**0.2**	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	**1.4**	**0.6**	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	**1.4**	**0.6**	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	**0.7**	**0.4**	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	**0.7**	**0.3**	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	**1.0**	**0.6**	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	**0.4**	**0.2**	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	**1.0**	**0.5**	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	**1.3**	**0.4**	<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	**0.9**	**0.3**	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	**1.3**	**0.6**	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	**1.4**	**0.7**	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	**1.4**	**0.7**	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	**9.3**	**3.9**	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	**9.3**	**3.9**	<0.8	<0.8

PARAMETER	UOM	LOR	BH29_0.4-0.5 SOIL - 24/7/2019 SE195772.032	BH30_0.1-0.2 SOIL - 24/7/2019 SE195772.033	BH45_0.1-0.2 SOIL - 24/7/2019 SE195772.048	BH45_0.3-0.4 SOIL - 24/7/2019 SE195772.049	BH47_0.1-0.2 SOIL - 24/7/2019 SE195772.051
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH50_0.1-0.2 SOIL - 24/7/2019 SE195772.054	BH57_0.1-0.2 SOIL - 24/7/2019 SE195772.061	BH58_0.1-0.2 SOIL - 24/7/2019 SE195772.062	BH58_0.4-0.5 SOIL - 24/7/2019 SE195772.063	BH59_0.1-0.2 SOIL - 24/7/2019 SE195772.064
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	BH62_0.1-0.2 SOIL - 25/7/2019 SE195772.067	BH72_0.5-0.6 SOIL - 25/7/2019 SE195772.078	BH82_0.4-0.5 SOIL - 25/7/2019 SE195772.089	BH90_0.1-0.2 SOIL - 25/7/2019 SE195772.097	BH91_0.1-0.2 SOIL - 25/7/2019 SE195772.098
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: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH101_0.7-0.8 SOIL - 25/7/2019 SE195772.111	BH103_0.1-0.2 SOIL - 25/7/2019 SE195772.113	BH107_0.1-0.2 SOIL - 25/7/2019 SE195772.119	BH108_0.6-0.7 SOIL - 25/7/2019 SE195772.121	BH110_0.1-0.2 SOIL - 25/7/2019 SE195772.123
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.1**
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.1**
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.1**
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.1**
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	BH110_0.6-0.7 SOIL - 25/7/2019 SE195772.124
Naphthalene	mg/kg	0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1
Fluorene	mg/kg	0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1
Anthracene	mg/kg	0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1
Pyrene	mg/kg	0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1
Chrysene	mg/kg	0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 30/7/2019

PARAMETER	UOM	LOR	BH1_0.1-0.2 SOIL - 24/7/2019 SE195772.001	BH7_0.1-0.2 SOIL - 24/7/2019 SE195772.008	BH8_0.1-0.2 SOIL - 24/7/2019 SE195772.009	BH14_0.1-0.2 SOIL - 24/7/2019 SE195772.016	BH15_0.1-0.2 SOIL - 24/7/2019 SE195772.017
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	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

OC Pesticides in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH17_0.1-0.2 SOIL - 24/7/2019 SE195772.019	BH19_0.1-0.2 SOIL - 24/7/2019 SE195772.021	BH20_0.1-0.2 SOIL - 24/7/2019 SE195772.022	BH21_0.1-0.2 SOIL - 24/7/2019 SE195772.023	BH22_0.1-0.2 SOIL - 24/7/2019 SE195772.025
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	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

OC Pesticides in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH23_0.1-0.2 SOIL - 24/7/2019 SE195772.026	BH24_0.1-0.2 SOIL - 24/7/2019 SE195772.027	BH27_0.1-0.2 SOIL - 24/7/2019 SE195772.030	BH30_0.1-0.2 SOIL - 24/7/2019 SE195772.033	BH45_0.1-0.2 SOIL - 24/7/2019 SE195772.048
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	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

OC Pesticides in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH47_0.1-0.2 SOIL - 24/7/2019 SE195772.051	BH50_0.1-0.2 SOIL - 24/7/2019 SE195772.054	BH57_0.1-0.2 SOIL - 24/7/2019 SE195772.061	BH58_0.1-0.2 SOIL - 24/7/2019 SE195772.062	BH59_0.1-0.2 SOIL - 24/7/2019 SE195772.064
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	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

OC Pesticides in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH62_0.1-0.2 SOIL - 25/7/2019 SE195772.067	BH90_0.1-0.2 SOIL - 25/7/2019 SE195772.097	BH91_0.1-0.2 SOIL - 25/7/2019 SE195772.098	BH103_0.1-0.2 SOIL - 25/7/2019 SE195772.113	BH107_0.1-0.2 SOIL - 25/7/2019 SE195772.119
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	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

OC Pesticides in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH110_0.1-0.2 SOIL - 25/7/2019 SE195772.123	C1 SOIL - 24/7/2019 SE195772.129	C2 SOIL - 24/7/2019 SE195772.130	C3 SOIL - 24/7/2019 SE195772.131	C4 SOIL - 24/7/2019 SE195772.132
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	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

OC Pesticides in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	C5 SOIL - 24/7/2019 SE195772.133	C6 SOIL - 24/7/2019 SE195772.134	C7 SOIL - 24/7/2019 SE195772.135	C8 SOIL - 24/7/2019 SE195772.136	C9 SOIL - 24/7/2019 SE195772.137
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	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

OC Pesticides in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	C10 SOIL - 24/7/2019 SE195772.138	C11 SOIL - 24/7/2019 SE195772.139	C12 SOIL - 24/7/2019 SE195772.140	C13 SOIL - 24/7/2019 SE195772.141	C14 SOIL - 25/7/2019 SE195772.142
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	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

OC Pesticides in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	C15 SOIL - 25/7/2019 SE195772.143	C16 SOIL - 25/7/2019 SE195772.144	C17 SOIL - 25/7/2019 SE195772.145	C18 SOIL - 25/7/2019 SE195772.146	C19 SOIL - 25/7/2019 SE195772.147
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	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

OC Pesticides in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	C20 SOIL - 25/7/2019 SE195772.148	C21 SOIL - 25/7/2019 SE195772.149	C23 SOIL - 25/7/2019 SE195772.151	C24 SOIL - 25/7/2019 SE195772.152	C25 SOIL - 25/7/2019 SE195772.153
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	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

OC Pesticides in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	C26 SOIL - 25/7/2019 SE195772.154	C27 SOIL - 25/7/2019 SE195772.155	C28 SOIL - 25/7/2019 SE195772.156	C29 SOIL - 25/7/2019 SE195772.157
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 30/7/2019

PARAMETER	UOM	LOR	BH1_0.1-0.2 SOIL - 24/7/2019 SE195772.001	BH7_0.1-0.2 SOIL - 24/7/2019 SE195772.008	BH8_0.1-0.2 SOIL - 24/7/2019 SE195772.009	BH14_0.1-0.2 SOIL - 24/7/2019 SE195772.016	BH15_0.1-0.2 SOIL - 24/7/2019 SE195772.017
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	BH17_0.1-0.2 SOIL - 24/7/2019 SE195772.019	BH19_0.1-0.2 SOIL - 24/7/2019 SE195772.021	BH20_0.1-0.2 SOIL - 24/7/2019 SE195772.022	BH21_0.1-0.2 SOIL - 24/7/2019 SE195772.023	BH22_0.1-0.2 SOIL - 24/7/2019 SE195772.025
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	BH23_0.1-0.2 SOIL - 24/7/2019 SE195772.026	BH24_0.1-0.2 SOIL - 24/7/2019 SE195772.027	BH27_0.1-0.2 SOIL - 24/7/2019 SE195772.030	BH30_0.1-0.2 SOIL - 24/7/2019 SE195772.033	BH45_0.1-0.2 SOIL - 24/7/2019 SE195772.048
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

OP Pesticides in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH47_0.1-0.2 SOIL - 24/7/2019 SE195772.051	BH50_0.1-0.2 SOIL - 24/7/2019 SE195772.054	BH57_0.1-0.2 SOIL - 24/7/2019 SE195772.061	BH58_0.1-0.2 SOIL - 24/7/2019 SE195772.062	BH59_0.1-0.2 SOIL - 24/7/2019 SE195772.064
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	BH62_0.1-0.2 SOIL - 25/7/2019 SE195772.067	BH90_0.1-0.2 SOIL - 25/7/2019 SE195772.097	BH91_0.1-0.2 SOIL - 25/7/2019 SE195772.098	BH103_0.1-0.2 SOIL - 25/7/2019 SE195772.113	BH107_0.1-0.2 SOIL - 25/7/2019 SE195772.119
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	BH110_0.1-0.2 SOIL - 25/7/2019 SE195772.123	C1 SOIL - 24/7/2019 SE195772.129	C2 SOIL - 24/7/2019 SE195772.130	C3 SOIL - 24/7/2019 SE195772.131	C4 SOIL - 24/7/2019 SE195772.132
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

OP Pesticides in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	C5 SOIL - 24/7/2019 SE195772.133	C6 SOIL - 24/7/2019 SE195772.134	C7 SOIL - 24/7/2019 SE195772.135	C8 SOIL - 24/7/2019 SE195772.136	C9 SOIL - 24/7/2019 SE195772.137
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	C10 SOIL - 24/7/2019 SE195772.138	C11 SOIL - 24/7/2019 SE195772.139	C12 SOIL - 24/7/2019 SE195772.140	C13 SOIL - 24/7/2019 SE195772.141	C14 SOIL - 25/7/2019 SE195772.142
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	C15 SOIL - 25/7/2019 SE195772.143	C16 SOIL - 25/7/2019 SE195772.144	C17 SOIL - 25/7/2019 SE195772.145	C18 SOIL - 25/7/2019 SE195772.146	C19 SOIL - 25/7/2019 SE195772.147
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

OP Pesticides in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	C20 SOIL - 25/7/2019 SE195772.148	C21 SOIL - 25/7/2019 SE195772.149	C23 SOIL - 25/7/2019 SE195772.151	C24 SOIL - 25/7/2019 SE195772.152	C25 SOIL - 25/7/2019 SE195772.153
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	C26 SOIL - 25/7/2019 SE195772.154	C27 SOIL - 25/7/2019 SE195772.155	C28 SOIL - 25/7/2019 SE195772.156	C29 SOIL - 25/7/2019 SE195772.157
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7

PCBs in Soil [AN420] Tested: 30/7/2019

PARAMETER	UOM	LOR	BH1_0.1-0.2 SOIL - 24/7/2019 SE195772.001	BH7_0.1-0.2 SOIL - 24/7/2019 SE195772.008	BH8_0.1-0.2 SOIL - 24/7/2019 SE195772.009	BH14_0.1-0.2 SOIL - 24/7/2019 SE195772.016	BH15_0.1-0.2 SOIL - 24/7/2019 SE195772.017
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	BH17_0.1-0.2 SOIL - 24/7/2019 SE195772.019	BH19_0.1-0.2 SOIL - 24/7/2019 SE195772.021	BH20_0.1-0.2 SOIL - 24/7/2019 SE195772.022	BH21_0.1-0.2 SOIL - 24/7/2019 SE195772.023	BH22_0.1-0.2 SOIL - 24/7/2019 SE195772.025
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	BH23_0.1-0.2 SOIL - 24/7/2019 SE195772.026	BH24_0.1-0.2 SOIL - 24/7/2019 SE195772.027	BH27_0.1-0.2 SOIL - 24/7/2019 SE195772.030	BH30_0.1-0.2 SOIL - 24/7/2019 SE195772.033	BH45_0.1-0.2 SOIL - 24/7/2019 SE195772.048
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

PCBs in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH47_0.1-0.2 SOIL - 24/7/2019 SE195772.051	BH50_0.1-0.2 SOIL - 24/7/2019 SE195772.054	BH57_0.1-0.2 SOIL - 24/7/2019 SE195772.061	BH58_0.1-0.2 SOIL - 24/7/2019 SE195772.062	BH59_0.1-0.2 SOIL - 24/7/2019 SE195772.064
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	BH62_0.1-0.2 SOIL - 25/7/2019 SE195772.067	BH90_0.1-0.2 SOIL - 25/7/2019 SE195772.097	BH91_0.1-0.2 SOIL - 25/7/2019 SE195772.098	BH103_0.1-0.2 SOIL - 25/7/2019 SE195772.113	BH107_0.1-0.2 SOIL - 25/7/2019 SE195772.119
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	BH110_0.1-0.2 SOIL - 25/7/2019 SE195772.123	C1 SOIL - 24/7/2019 SE195772.129	C2 SOIL - 24/7/2019 SE195772.130	C3 SOIL - 24/7/2019 SE195772.131	C4 SOIL - 24/7/2019 SE195772.132
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

PCBs in Soil [AN420] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	C5 SOIL - 24/7/2019 SE195772.133
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

Soluble Anions (1:5) in Soil by Ion Chromatography [AN245] Tested: 1/8/2019

PARAMETER	UOM	LOR	BH10_0.1-0.2 SOIL - 24/7/2019 SE195772.011	BH10_1-1.1 SOIL - 24/7/2019 SE195772.012	BH95_0.1-0.2 SOIL - 25/7/2019 SE195772.102	BH95_0.5-0.6 SOIL - 25/7/2019 SE195772.103	BH95_3.8-3.9 SOIL - 25/7/2019 SE195772.104
Chloride	mg/kg	0.25	18	1600	350	540	970
Sulfate	mg/kg	5	11	280	130	420	130

PARAMETER	UOM	LOR	BH105_0.1-0.2 SOIL - 25/7/2019 SE195772.115	BH105_0.4-0.5 SOIL - 25/7/2019 SE195772.116	BH105_4-0-4.1 SOIL - 25/7/2019 SE195772.117
Chloride	mg/kg	0.25	3.5	5.0	71
Sulfate	mg/kg	5	<5.0	7.2	11

pH in soil (1:5) [AN101] Tested: 1/8/2019

PARAMETER	UOM	LOR	BH10_0.1-0.2 SOIL - 24/7/2019 SE195772.011	BH10_1-1.1 SOIL - 24/7/2019 SE195772.012	BH95_0.1-0.2 SOIL - 25/7/2019 SE195772.102	BH95_0.5-0.6 SOIL - 25/7/2019 SE195772.103	BH95_3.8-3.9 SOIL - 25/7/2019 SE195772.104
pH	pH Units	0.1	**4.8**	**5.0**	**7.1**	**7.3**	**7.4**

PARAMETER	UOM	LOR	BH105_0.1-0.2 SOIL - 25/7/2019 SE195772.115	BH105_0.4-0.5 SOIL - 25/7/2019 SE195772.116	BH105_4-0-4.1 SOIL - 25/7/2019 SE195772.117
pH	pH Units	0.1	**6.7**	**6.9**	**7.0**

Conductivity and TDS by Calculation - Soil [AN106] Tested: 1/8/2019

PARAMETER	UOM	LOR	BH10_0.1-0.2 SOIL - 24/7/2019 SE195772.011	BH10_1-1.1 SOIL - 24/7/2019 SE195772.012	BH95_0.1-0.2 SOIL - 25/7/2019 SE195772.102	BH95_0.5-0.6 SOIL - 25/7/2019 SE195772.103	BH95_3.8-3.9 SOIL - 25/7/2019 SE195772.104
Conductivity of Extract (1:5 as received)	µS/cm	1	930	910	310	57	220
Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	1100	1100	370	68	300

PARAMETER	UOM	LOR	BH105_0.1-0.2 SOIL - 25/7/2019 SE195772.115	BH105_0.4-0.5 SOIL - 25/7/2019 SE195772.116	BH105_4-0-4.1 SOIL - 25/7/2019 SE195772.117
Conductivity of Extract (1:5 as received)	µS/cm	1	23	76	79
Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	25	84	94

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) [AN122] Tested: 30/7/2019

PARAMETER	UOM	LOR	BH10_0.1-0.2 SOIL - 24/7/2019 SE195772.011	BH10_1-1.1 SOIL - 24/7/2019 SE195772.012	BH95_0.1-0.2 SOIL - 25/7/2019 SE195772.102	BH95_0.5-0.6 SOIL - 25/7/2019 SE195772.103	BH95_3.8-3.9 SOIL - 25/7/2019 SE195772.104
Exchangeable Sodium, Na	mg/kg	2	210	2100	530	1100	1100
Exchangeable Sodium, Na	meq/100g	0.01	0.93	9.2	2.3	4.9	4.8
Exchangeable Sodium Percentage*	%	0.1	6.4	34.5	15.1	26.2	35.2
Exchangeable Potassium, K	mg/kg	2	110	200	230	98	70
Exchangeable Potassium, K	meq/100g	0.01	0.29	0.52	0.58	0.25	0.18
Exchangeable Potassium Percentage*	%	0.1	2.0	2.0	3.8	1.3	1.3
Exchangeable Calcium, Ca	mg/kg	2	1300	220	1500	1000	270
Exchangeable Calcium, Ca	meq/100g	0.01	6.6	1.1	7.5	5.0	1.3
Exchangeable Calcium Percentage*	%	0.1	45.0	4.1	48.9	26.8	9.8
Exchangeable Magnesium, Mg	mg/kg	2	830	1900	600	1000	890
Exchangeable Magnesium, Mg	meq/100g	0.02	6.8	16	5.0	8.6	7.3
Exchangeable Magnesium Percentage*	%	0.1	46.6	59.4	32.3	45.6	53.7
Cation Exchange Capacity	meq/100g	0.02	15	27	15	19	14
Sodicity from Sol. and Exch. Sodium*	mg/kg	2	-	-	-	-	-

PARAMETER	UOM	LOR	BH105_0.1-0.2 SOIL - 25/7/2019 SE195772.115	BH105_0.4-0.5 SOIL - 25/7/2019 SE195772.116	BH105_4-0-4.1 SOIL - 25/7/2019 SE195772.117
Exchangeable Sodium, Na	mg/kg	2	28	80	330
Exchangeable Sodium, Na	meq/100g	0.01	0.12	0.35	1.4
Exchangeable Sodium Percentage*	%	0.1	3.4	7.9	12.2
Exchangeable Potassium, K	mg/kg	2	140	130	100
Exchangeable Potassium, K	meq/100g	0.01	0.35	0.32	0.26
Exchangeable Potassium Percentage*	%	0.1	9.9	7.4	2.2
Exchangeable Calcium, Ca	mg/kg	2	360	340	640
Exchangeable Calcium, Ca	meq/100g	0.01	1.8	1.7	3.2
Exchangeable Calcium Percentage*	%	0.1	51.4	38.6	27.3
Exchangeable Magnesium, Mg	mg/kg	2	150	250	830
Exchangeable Magnesium, Mg	meq/100g	0.02	1.2	2.0	6.8
Exchangeable Magnesium Percentage*	%	0.1	35.3	46.1	58.3
Cation Exchange Capacity	meq/100g	0.02	3.5	4.4	12
Sodicity from Sol. and Exch. Sodium*	mg/kg	2	-	-	-

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 30/7/2019

PARAMETER	UOM	LOR	BH1_0.1-0.2 SOIL - 24/7/2019 SE195772.001	BH1_0.7-0.8 SOIL - 24/7/2019 SE195772.002	BH7_0.1-0.2 SOIL - 24/7/2019 SE195772.008	BH8_0.1-0.2 SOIL - 24/7/2019 SE195772.009	BH14_0.1-0.2 SOIL - 24/7/2019 SE195772.016
Arsenic, As	mg/kg	1	7	8	10	10	9
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	14	16	16	17	20
Copper, Cu	mg/kg	0.5	37	18	13	21	16
Lead, Pb	mg/kg	1	82	18	21	24	24
Nickel, Ni	mg/kg	0.5	12	3.8	6.1	6.5	4.9
Zinc, Zn	mg/kg	2	130	26	23	37	55

PARAMETER	UOM	LOR	BH15_0.1-0.2 SOIL - 24/7/2019 SE195772.017	BH17_0.1-0.2 SOIL - 24/7/2019 SE195772.019	BH19_0.1-0.2 SOIL - 24/7/2019 SE195772.021	BH20_0.1-0.2 SOIL - 24/7/2019 SE195772.022	BH21_0.1-0.2 SOIL - 24/7/2019 SE195772.023
Arsenic, As	mg/kg	1	11	9	8	10	10
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	14	22	21	19	14
Copper, Cu	mg/kg	0.5	51	11	16	19	12
Lead, Pb	mg/kg	1	42	24	20	24	26
Nickel, Ni	mg/kg	0.5	5.3	5.2	5.2	5.6	5.4
Zinc, Zn	mg/kg	2	210	86	43	68	160

PARAMETER	UOM	LOR	BH21_0.6-0.7 SOIL - 24/7/2019 SE195772.024	BH22_0.1-0.2 SOIL - 24/7/2019 SE195772.025	BH23_0.1-0.2 SOIL - 24/7/2019 SE195772.026	BH24_0.1-0.2 SOIL - 24/7/2019 SE195772.027	BH27_0.1-0.2 SOIL - 24/7/2019 SE195772.030
Arsenic, As	mg/kg	1	7	4	8	7	9
Cadmium, Cd	mg/kg	0.3	<0.3	1.4	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	13	37	12	13	19
Copper, Cu	mg/kg	0.5	22	51	9.3	8.8	14
Lead, Pb	mg/kg	1	14	130	20	21	19
Nickel, Ni	mg/kg	0.5	6.1	24	3.5	4.6	3.7
Zinc, Zn	mg/kg	2	29	8100	39	29	31

PARAMETER	UOM	LOR	BH29_0.4-0.5 SOIL - 24/7/2019 SE195772.032	BH30_0.1-0.2 SOIL - 24/7/2019 SE195772.033	BH45_0.1-0.2 SOIL - 24/7/2019 SE195772.048	BH45_0.3-0.4 SOIL - 24/7/2019 SE195772.049	BH47_0.1-0.2 SOIL - 24/7/2019 SE195772.051
Arsenic, As	mg/kg	1	9	8	10	8	11
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	19	28	29	17	21
Copper, Cu	mg/kg	0.5	24	16	13	15	15
Lead, Pb	mg/kg	1	19	23	26	15	30
Nickel, Ni	mg/kg	0.5	7.1	4.0	3.5	3.5	6.3
Zinc, Zn	mg/kg	2	24	42	40	17	38

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 30/7/2019

(continued)

PARAMETER	UOM	LOR	BH50_0.1-0.2 SOIL - 24/7/2019 SE195772.054	BH57_0.1-0.2 SOIL - 24/7/2019 SE195772.061	BH58_0.1-0.2 SOIL - 24/7/2019 SE195772.062	BH58_0.4-0.5 SOIL - 24/7/2019 SE195772.063	BH59_0.1-0.2 SOIL - 24/7/2019 SE195772.064
Arsenic, As	mg/kg	1	8	9	8	7	1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	18	16	16	15	1.8
Copper, Cu	mg/kg	0.5	12	21	22	16	1.0
Lead, Pb	mg/kg	1	22	20	21	11	4
Nickel, Ni	mg/kg	0.5	5.3	6.1	6.2	5.1	<0.5
Zinc, Zn	mg/kg	2	38	30	52	12	54

PARAMETER	UOM	LOR	BH62_0.1-0.2 SOIL - 25/7/2019 SE195772.067	BH72_0.5-0.6 SOIL - 25/7/2019 SE195772.078	BH82_0.4-0.5 SOIL - 25/7/2019 SE195772.089	BH90_0.1-0.2 SOIL - 25/7/2019 SE195772.097	BH91_0.1-0.2 SOIL - 25/7/2019 SE195772.098
Arsenic, As	mg/kg	1	6	7	8	7	7
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	21	13	12	18	17
Copper, Cu	mg/kg	0.5	22	13	18	14	19
Lead, Pb	mg/kg	1	53	13	13	21	21
Nickel, Ni	mg/kg	0.5	23	4.1	5.4	4.9	9.7
Zinc, Zn	mg/kg	2	1200	16	27	47	54

PARAMETER	UOM	LOR	BH101_0.7-0.8 SOIL - 25/7/2019 SE195772.111	BH103_0.1-0.2 SOIL - 25/7/2019 SE195772.113	BH107_0.1-0.2 SOIL - 25/7/2019 SE195772.119	BH108_0.6-0.7 SOIL - 25/7/2019 SE195772.121	BH110_0.1-0.2 SOIL - 25/7/2019 SE195772.123
Arsenic, As	mg/kg	1	5	8	4	7	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	0.5
Chromium, Cr	mg/kg	0.5	8.5	8.6	8.3	19	11
Copper, Cu	mg/kg	0.5	14	18	10	17	11
Lead, Pb	mg/kg	1	13	28	11	33	120
Nickel, Ni	mg/kg	0.5	8.2	6.3	5.6	7.0	3.5
Zinc, Zn	mg/kg	2	22	46	12	21	2700

PARAMETER	UOM	LOR	BH110_0.6-0.7 SOIL - 25/7/2019 SE195772.124	QD1 SOIL - 24/7/2019 SE195772.125	QD2 SOIL - 25/7/2019 SE195772.126	C1 SOIL - 24/7/2019 SE195772.129	C2 SOIL - 24/7/2019 SE195772.130
Arsenic, As	mg/kg	1	6	8	4	7	9
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	20	13	10	14	19
Copper, Cu	mg/kg	0.5	16	38	17	18	14
Lead, Pb	mg/kg	1	17	73	23	20	26
Nickel, Ni	mg/kg	0.5	2.7	14	5.2	8.3	5.3
Zinc, Zn	mg/kg	2	21	110	630	41	34

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 30/7/2019

(continued)

PARAMETER	UOM	LOR	C3 SOIL - 24/7/2019 SE195772.131	C4 SOIL - 24/7/2019 SE195772.132	C5 SOIL - 24/7/2019 SE195772.133	C6 SOIL - 24/7/2019 SE195772.134	C7 SOIL - 24/7/2019 SE195772.135
Arsenic, As	mg/kg	1	9	11	8	10	11
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	15	21	24	18	20
Copper, Cu	mg/kg	0.5	17	12	20	18	23
Lead, Pb	mg/kg	1	18	26	22	21	24
Nickel, Ni	mg/kg	0.5	7.8	5.1	3.9	3.9	4.6
Zinc, Zn	mg/kg	2	37	32	38	36	49

PARAMETER	UOM	LOR	C8 SOIL - 24/7/2019 SE195772.136	C9 SOIL - 24/7/2019 SE195772.137	C10 SOIL - 24/7/2019 SE195772.138	C11 SOIL - 24/7/2019 SE195772.139	C12 SOIL - 24/7/2019 SE195772.140
Arsenic, As	mg/kg	1	11	9	7	9	9
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	22	22	17	22	19
Copper, Cu	mg/kg	0.5	22	15	13	17	19
Lead, Pb	mg/kg	1	30	20	19	25	22
Nickel, Ni	mg/kg	0.5	3.9	3.7	4.5	5.3	5.5
Zinc, Zn	mg/kg	2	38	32	26	38	52

PARAMETER	UOM	LOR	C13 SOIL - 24/7/2019 SE195772.141	C14 SOIL - 25/7/2019 SE195772.142	C15 SOIL - 25/7/2019 SE195772.143	C16 SOIL - 25/7/2019 SE195772.144	C17 SOIL - 25/7/2019 SE195772.145
Arsenic, As	mg/kg	1	9	8	10	8	10
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	21	18	21	19	30
Copper, Cu	mg/kg	0.5	18	11	12	15	18
Lead, Pb	mg/kg	1	22	21	24	19	24
Nickel, Ni	mg/kg	0.5	5.7	5.2	5.7	5.1	4.9
Zinc, Zn	mg/kg	2	53	230	27	35	29

PARAMETER	UOM	LOR	C18 SOIL - 25/7/2019 SE195772.146	C19 SOIL - 25/7/2019 SE195772.147	C20 SOIL - 25/7/2019 SE195772.148	C21 SOIL - 25/7/2019 SE195772.149	C23 SOIL - 25/7/2019 SE195772.151
Arsenic, As	mg/kg	1	8	10	7	7	8
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	20	24	24	18	22
Copper, Cu	mg/kg	0.5	15	17	11	13	9.9
Lead, Pb	mg/kg	1	23	21	21	19	20
Nickel, Ni	mg/kg	0.5	5.0	4.1	4.3	5.0	4.0
Zinc, Zn	mg/kg	2	31	28	22	28	25

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 30/7/2019

(continued)

PARAMETER	UOM	LOR	C24 SOIL - 25/7/2019 SE195772.152	C25 SOIL - 25/7/2019 SE195772.153	C26 SOIL - 25/7/2019 SE195772.154	C27 SOIL - 25/7/2019 SE195772.155	C28 SOIL - 25/7/2019 SE195772.156
Arsenic, As	mg/kg	1	7	6	7	4	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	18	12	23	7.4	9.9
Copper, Cu	mg/kg	0.5	9.9	23	9.7	9.3	6.9
Lead, Pb	mg/kg	1	24	14	20	12	10
Nickel, Ni	mg/kg	0.5	5.7	5.2	4.0	5.6	4.2
Zinc, Zn	mg/kg	2	23	42	23	16	9.7

PARAMETER	UOM	LOR	C29 SOIL - 25/7/2019 SE195772.157
Arsenic, As	mg/kg	1	5
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.5	12
Copper, Cu	mg/kg	0.5	13
Lead, Pb	mg/kg	1	20
Nickel, Ni	mg/kg	0.5	8.2
Zinc, Zn	mg/kg	2	31

Mercury in Soil [AN312] Tested: 30/7/2019

PARAMETER	UOM	LOR	BH1_0.1-0.2 SOIL - 24/7/2019 SE195772.001	BH1_0.7-0.8 SOIL - 24/7/2019 SE195772.002	BH7_0.1-0.2 SOIL - 24/7/2019 SE195772.008	BH8_0.1-0.2 SOIL - 24/7/2019 SE195772.009	BH14_0.1-0.2 SOIL - 24/7/2019 SE195772.016
Mercury	mg/kg	0.05	0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH15_0.1-0.2 SOIL - 24/7/2019 SE195772.017	BH17_0.1-0.2 SOIL - 24/7/2019 SE195772.019	BH19_0.1-0.2 SOIL - 24/7/2019 SE195772.021	BH20_0.1-0.2 SOIL - 24/7/2019 SE195772.022	BH21_0.1-0.2 SOIL - 24/7/2019 SE195772.023
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH21_0.6-0.7 SOIL - 24/7/2019 SE195772.024	BH22_0.1-0.2 SOIL - 24/7/2019 SE195772.025	BH23_0.1-0.2 SOIL - 24/7/2019 SE195772.026	BH24_0.1-0.2 SOIL - 24/7/2019 SE195772.027	BH27_0.1-0.2 SOIL - 24/7/2019 SE195772.030
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH29_0.4-0.5 SOIL - 24/7/2019 SE195772.032	BH30_0.1-0.2 SOIL - 24/7/2019 SE195772.033	BH45_0.1-0.2 SOIL - 24/7/2019 SE195772.048	BH45_0.3-0.4 SOIL - 24/7/2019 SE195772.049	BH47_0.1-0.2 SOIL - 24/7/2019 SE195772.051
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH50_0.1-0.2 SOIL - 24/7/2019 SE195772.054	BH57_0.1-0.2 SOIL - 24/7/2019 SE195772.061	BH58_0.1-0.2 SOIL - 24/7/2019 SE195772.062	BH58_0.4-0.5 SOIL - 24/7/2019 SE195772.063	BH59_0.1-0.2 SOIL - 24/7/2019 SE195772.064
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH62_0.1-0.2 SOIL - 25/7/2019 SE195772.067	BH72_0.5-0.6 SOIL - 25/7/2019 SE195772.078	BH82_0.4-0.5 SOIL - 25/7/2019 SE195772.089	BH90_0.1-0.2 SOIL - 25/7/2019 SE195772.097	BH91_0.1-0.2 SOIL - 25/7/2019 SE195772.098
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH101_0.7-0.8 SOIL - 25/7/2019 SE195772.111	BH103_0.1-0.2 SOIL - 25/7/2019 SE195772.113	BH107_0.1-0.2 SOIL - 25/7/2019 SE195772.119	BH108_0.6-0.7 SOIL - 25/7/2019 SE195772.121	BH110_0.1-0.2 SOIL - 25/7/2019 SE195772.123
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Mercury in Soil [AN312] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH110_0.6-0.7 SOIL - 25/7/2019 SE195772.124	QD1 SOIL - 24/7/2019 SE195772.125	QD2 SOIL - 25/7/2019 SE195772.126	C1 SOIL - 24/7/2019 SE195772.129	C2 SOIL - 24/7/2019 SE195772.130
Mercury	mg/kg	0.05	<0.05	0.06	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	C3 SOIL - 24/7/2019 SE195772.131	C4 SOIL - 24/7/2019 SE195772.132	C5 SOIL - 24/7/2019 SE195772.133	C6 SOIL - 24/7/2019 SE195772.134	C7 SOIL - 24/7/2019 SE195772.135
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	C8 SOIL - 24/7/2019 SE195772.136	C9 SOIL - 24/7/2019 SE195772.137	C10 SOIL - 24/7/2019 SE195772.138	C11 SOIL - 24/7/2019 SE195772.139	C12 SOIL - 24/7/2019 SE195772.140
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	C13 SOIL - 24/7/2019 SE195772.141	C14 SOIL - 25/7/2019 SE195772.142	C15 SOIL - 25/7/2019 SE195772.143	C16 SOIL - 25/7/2019 SE195772.144	C17 SOIL - 25/7/2019 SE195772.145
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	C18 SOIL - 25/7/2019 SE195772.146	C19 SOIL - 25/7/2019 SE195772.147	C20 SOIL - 25/7/2019 SE195772.148	C21 SOIL - 25/7/2019 SE195772.149	C23 SOIL - 25/7/2019 SE195772.151
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	C24 SOIL - 25/7/2019 SE195772.152	C25 SOIL - 25/7/2019 SE195772.153	C26 SOIL - 25/7/2019 SE195772.154	C27 SOIL - 25/7/2019 SE195772.155	C28 SOIL - 25/7/2019 SE195772.156
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	C29 SOIL - 25/7/2019 SE195772.157
Mercury	mg/kg	0.05	<0.05

Moisture Content [AN002] Tested: 30/7/2019

PARAMETER	UOM	LOR	BH1_0.1-0.2 SOIL - 24/7/2019 SE195772.001	BH1_0.7-0.8 SOIL - 24/7/2019 SE195772.002	BH7_0.1-0.2 SOIL - 24/7/2019 SE195772.008	BH8_0.1-0.2 SOIL - 24/7/2019 SE195772.009	BH10_0.1-0.2 SOIL - 24/7/2019 SE195772.011
% Moisture	%w/w	0.5	13.3	16.8	11.9	10.5	16.5

PARAMETER	UOM	LOR	BH10_1-1.1 SOIL - 24/7/2019 SE195772.012	BH14_0.1-0.2 SOIL - 24/7/2019 SE195772.016	BH15_0.1-0.2 SOIL - 24/7/2019 SE195772.017	BH17_0.1-0.2 SOIL - 24/7/2019 SE195772.019	BH19_0.1-0.2 SOIL - 24/7/2019 SE195772.021
% Moisture	%w/w	0.5	18.7	10.8	26.1	16.6	10.4

PARAMETER	UOM	LOR	BH20_0.1-0.2 SOIL - 24/7/2019 SE195772.022	BH21_0.1-0.2 SOIL - 24/7/2019 SE195772.023	BH21_0.6-0.7 SOIL - 24/7/2019 SE195772.024	BH22_0.1-0.2 SOIL - 24/7/2019 SE195772.025	BH23_0.1-0.2 SOIL - 24/7/2019 SE195772.026
% Moisture	%w/w	0.5	16.0	14.8	16.4	7.6	11.6

PARAMETER	UOM	LOR	BH24_0.1-0.2 SOIL - 24/7/2019 SE195772.027	BH27_0.1-0.2 SOIL - 24/7/2019 SE195772.030	BH29_0.4-0.5 SOIL - 24/7/2019 SE195772.032	BH30_0.1-0.2 SOIL - 24/7/2019 SE195772.033	BH45_0.1-0.2 SOIL - 24/7/2019 SE195772.048
% Moisture	%w/w	0.5	13.3	15.1	21.5	16.2	17.1

PARAMETER	UOM	LOR	BH45_0.3-0.4 SOIL - 24/7/2019 SE195772.049	BH47_0.1-0.2 SOIL - 24/7/2019 SE195772.051	BH50_0.1-0.2 SOIL - 24/7/2019 SE195772.054	BH57_0.1-0.2 SOIL - 24/7/2019 SE195772.061	BH58_0.1-0.2 SOIL - 24/7/2019 SE195772.062
% Moisture	%w/w	0.5	17.8	17.9	14.4	16.1	18.7

PARAMETER	UOM	LOR	BH58_0.4-0.5 SOIL - 24/7/2019 SE195772.063	BH59_0.1-0.2 SOIL - 24/7/2019 SE195772.064	BH62_0.1-0.2 SOIL - 25/7/2019 SE195772.067	BH72_0.5-0.6 SOIL - 25/7/2019 SE195772.078	BH82_0.4-0.5 SOIL - 25/7/2019 SE195772.089
% Moisture	%w/w	0.5	18.9	6.9	6.9	17.4	30.7

PARAMETER	UOM	LOR	BH90_0.1-0.2 SOIL - 25/7/2019 SE195772.097	BH91_0.1-0.2 SOIL - 25/7/2019 SE195772.098	BH95_0.1-0.2 SOIL - 25/7/2019 SE195772.102	BH95_0.5-0.6 SOIL - 25/7/2019 SE195772.103	BH95_3.8-3.9 SOIL - 25/7/2019 SE195772.104
% Moisture	%w/w	0.5	<0.5	16.1	17.5	16.1	26.1

Moisture Content [AN002] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	BH101_0.7-0.8 SOIL - 25/7/2019 SE195772.111	BH103_0.1-0.2 SOIL - 25/7/2019 SE195772.113	BH105_0.1-0.2 SOIL - 25/7/2019 SE195772.115	BH105_0.4-0.5 SOIL - 25/7/2019 SE195772.116	BH105_4-0-4.1 SOIL - 25/7/2019 SE195772.117
% Moisture	%w/w	0.5	11.7	11.6	10.4	10.2	15.8

PARAMETER	UOM	LOR	BH107_0.1-0.2 SOIL - 25/7/2019 SE195772.119	BH108_0.6-0.7 SOIL - 25/7/2019 SE195772.121	BH110_0.1-0.2 SOIL - 25/7/2019 SE195772.123	BH110_0.6-0.7 SOIL - 25/7/2019 SE195772.124	QD1 SOIL - 24/7/2019 SE195772.125
% Moisture	%w/w	0.5	14.3	12.0	8.7	37.0	11.8

PARAMETER	UOM	LOR	QD2 SOIL - 25/7/2019 SE195772.126	TRIP BLANK SOIL - 24/7/2019 SE195772.128	C1 SOIL - 24/7/2019 SE195772.129	C2 SOIL - 24/7/2019 SE195772.130	C3 SOIL - 24/7/2019 SE195772.131
% Moisture	%w/w	0.5	16.1	<0.5	10.8	15.5	14.2

PARAMETER	UOM	LOR	C4 SOIL - 24/7/2019 SE195772.132	C5 SOIL - 24/7/2019 SE195772.133	C6 SOIL - 24/7/2019 SE195772.134	C7 SOIL - 24/7/2019 SE195772.135	C8 SOIL - 24/7/2019 SE195772.136
% Moisture	%w/w	0.5	11.8	15.0	17.6	16.6	16.2

PARAMETER	UOM	LOR	C9 SOIL - 24/7/2019 SE195772.137	C10 SOIL - 24/7/2019 SE195772.138	C11 SOIL - 24/7/2019 SE195772.139	C12 SOIL - 24/7/2019 SE195772.140	C13 SOIL - 24/7/2019 SE195772.141
% Moisture	%w/w	0.5	14.0	14.4	19.5	15.3	19.2

PARAMETER	UOM	LOR	C14 SOIL - 25/7/2019 SE195772.142	C15 SOIL - 25/7/2019 SE195772.143	C16 SOIL - 25/7/2019 SE195772.144	C17 SOIL - 25/7/2019 SE195772.145	C18 SOIL - 25/7/2019 SE195772.146
% Moisture	%w/w	0.5	12.5	15.9	12.9	11.0	13.9

PARAMETER	UOM	LOR	C19 SOIL - 25/7/2019 SE195772.147	C20 SOIL - 25/7/2019 SE195772.148	C21 SOIL - 25/7/2019 SE195772.149	C23 SOIL - 25/7/2019 SE195772.151	C24 SOIL - 25/7/2019 SE195772.152
% Moisture	%w/w	0.5	14.1	13.2	11.5	10.3	13.9

Moisture Content [AN002] Tested: 30/7/2019 (continued)

PARAMETER	UOM	LOR	C25 SOIL - 25/7/2019 SE195772.153	C26 SOIL - 25/7/2019 SE195772.154	C27 SOIL - 25/7/2019 SE195772.155	C28 SOIL - 25/7/2019 SE195772.156	C29 SOIL - 25/7/2019 SE195772.157
% Moisture	%w/w	0.5	**16.8**	**13.5**	**10.7**	**9.1**	**10.6**

Fibre Identification in soil [AN602] Tested: 6/8/2019

PARAMETER	UOM	LOR	BH1_0.1-0.2 SOIL - 24/7/2019 SE195772.001	BH7_0.1-0.2 SOIL - 24/7/2019 SE195772.008	BH8_0.1-0.2 SOIL - 24/7/2019 SE195772.009	BH14_0.1-0.2 SOIL - 24/7/2019 SE195772.016	BH15_0.1-0.2 SOIL - 24/7/2019 SE195772.017
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	BH17_0.1-0.2 SOIL - 24/7/2019 SE195772.019	BH19_0.1-0.2 SOIL - 24/7/2019 SE195772.021	BH20_0.1-0.2 SOIL - 24/7/2019 SE195772.022	BH21_0.1-0.2 SOIL - 24/7/2019 SE195772.023	BH22_0.1-0.2 SOIL - 24/7/2019 SE195772.025
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	BH23_0.1-0.2 SOIL - 24/7/2019 SE195772.026	BH24_0.1-0.2 SOIL - 24/7/2019 SE195772.027	BH27_0.1-0.2 SOIL - 24/7/2019 SE195772.030	BH30_0.1-0.2 SOIL - 24/7/2019 SE195772.033	BH45_0.1-0.2 SOIL - 24/7/2019 SE195772.048
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	BH47_0.1-0.2 SOIL - 24/7/2019 SE195772.051	BH50_0.1-0.2 SOIL - 24/7/2019 SE195772.054	BH57_0.1-0.2 SOIL - 24/7/2019 SE195772.061	BH58_0.1-0.2 SOIL - 24/7/2019 SE195772.062	BH59_0.1-0.2 SOIL - 24/7/2019 SE195772.064
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	BH62_0.1-0.2 SOIL - 25/7/2019 SE195772.067	BH90_0.1-0.2 SOIL - 25/7/2019 SE195772.097	BH91_0.1-0.2 SOIL - 25/7/2019 SE195772.098	BH107_0.1-0.2 SOIL - 25/7/2019 SE195772.119	BH110_0.1-0.2 SOIL - 25/7/2019 SE195772.123
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

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Fibre ID in bulk materials [AN602] Tested: 7/8/2019

PARAMETER	UOM	LOR	ASB1 MATERIAL - 25/7/2019 SE195772.158
Asbestos Detected	No unit	-	Yes

VOCs in Water [AN433] Tested: 31/7/2019

PARAMETER	UOM	LOR	QR1 WATER - 25/7/2019 SE195772.127
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	µg/L	0.5	<0.5

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 31/7/2019

PARAMETER	UOM	LOR	QR1 WATER - 25/7/2019 SE195772.127
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: 30/7/2019

PARAMETER	UOM	LOR	QR1 WATER - 25/7/2019 SE195772.127
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 >C16-C34 (F3)	µg/L	500	<500
TRH >C34-C40 (F4)	µg/L	500	<500
TRH C10-C36	µg/L	450	<450
TRH C10-C40	µg/L	650	<650
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 1/8/2019

PARAMETER	UOM	LOR	QR1 WATER - 25/7/2019 SE195772.127
Arsenic, As	µg/L	1	<1
Cadmium, Cd	µg/L	0.1	<0.1
Chromium, Cr	µg/L	1	<1
Copper, Cu	µg/L	1	<1
Lead, Pb	µg/L	1	<1
Nickel, Ni	µg/L	1	<1
Zinc, Zn	µg/L	5	<5

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 30/7/2019

PARAMETER	UOM	LOR	QR1 WATER - 25/7/2019 SE195772.127
Mercury	mg/L	0.0001	<0.0001

Sample Subcontracted [] Tested: 8/8/2019

PARAMETER	UOM	LOR	BH23_0.1-0.2 SOIL - 24/7/2019 SE195772.026	BH32_0.1-0.2 SOIL - 24/7/2019 SE195772.035	BH34_0.1-0.2 SOIL - 24/7/2019 SE195772.037	BH37_0.1-0.2 SOIL - 24/7/2019 SE195772.040	BH39_0.1-0.2 SOIL - 24/7/2019 SE195772.042
SGS Melbourne*	No unit	-	Subcontracted	Subcontracted	Subcontracted	Subcontracted	Subcontracted

PARAMETER	UOM	LOR	BH52_0.1-0.2 SOIL - 24/7/2019 SE195772.056	BH56_0.1-0.2 SOIL - 24/7/2019 SE195772.060	BH69_0.1-0.2 SOIL - 25/7/2019 SE195772.074	BH71_0.1-0.2 SOIL - 25/7/2019 SE195772.076
SGS Melbourne*	No unit	-	Subcontracted	Subcontracted	Subcontracted	Subcontracted

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METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode and is calibrated against 3 buffers purchased commercially. For soils, sediments and sludges, an extract with water (or 0.01M CaCl2) is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN106	Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos /cm or µS/cm @ 25°C. For soils, an extract with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Salinity can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. Reference APHA 2510 B.
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.-
AN245	Anions by Ion Chromatography: A water sample is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO2, NO3 and SO4 are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
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, in accordance with USEPA 6020A.
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .

AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602	The sample can be reported “no asbestos found at the reporting limit of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (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.		

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.pv.sgsvr/en-gb/environment.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

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Project	**E24287 859 Mamre Rd Kemps Creek**
Order Number	**E24287**
Samples	26

LABORATORY DETAILS

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SGS Reference	**SE195772 R0**
Date Received	26 Jul 2019
Date Reported	08 Aug 2019

COMMENTS

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

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

Asbestos analysed by Approved Identifiers Yusuf Kuthpudin and Ravee Sivasubramaniam .
Acid Herbicides subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420. Report number ME311375

SIGNATORIES

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Ravee Sivasubramaniam
Hygiene Team Leader

RESULTS

Fibre Identification in soil — Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE195772.001	BH1_0.1-0.2	Soil	122g Clay,Sand,Soil, Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.008	BH7_0.1-0.2	Soil	99g Clay,Soil,Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.009	BH8_0.1-0.2	Soil	115g Clay,Soil,Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.016	BH14_0.1-0.2	Soil	127g Clay,Soil,Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.017	BH15_0.1-0.2	Soil	25g Clay,Soil,Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.019	BH17_0.1-0.2	Soil	157g Clay,Soil,Rocks	24 Jul 2019	No Asbestos Found Organic Fibres Detected	<0.01
SE195772.021	BH19_0.1-0.2	Soil	105g Clay,Soil,Rocks	24 Jul 2019	No Asbestos Found Organic Fibres Detected	<0.01
SE195772.022	BH20_0.1-0.2	Soil	106g Clay,Soil,Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.023	BH21_0.1-0.2	Soil	128g Clay,Soil,Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.025	BH22_0.1-0.2	Soil	242g Sand,Soil,Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.026	BH23_0.1-0.2	Soil	123g Clay,Sand,Soil, Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.027	BH24_0.1-0.2	Soil	122g Clay,Sand,Soil, Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.030	BH27_0.1-0.2	Soil	134g Clay,Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.033	BH30_0.1-0.2	Soil	99g Clay,Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.048	BH45_0.1-0.2	Soil	122g Clay,Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.051	BH47_0.1-0.2	Soil	143g Clay,Sand,Soil, Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.054	BH50_0.1-0.2	Soil	113g Clay,Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.061	BH57_0.1-0.2	Soil	143g Clay,Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.062	BH58_0.1-0.2	Soil	74g Clay,Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.064	BH59_0.1-0.2	Soil	119g Sand,Rocks	24 Jul 2019	No Asbestos Found	<0.01
SE195772.067	BH62_0.1-0.2	Soil	100g Clay,Sand,Soil, Rocks	25 Jul 2019	No Asbestos Found	<0.01
SE195772.097	BH90_0.1-0.2	Soil	153g Clay,Soil,Rocks	25 Jul 2019	No Asbestos Found	<0.01
SE195772.098	BH91_0.1-0.2	Soil	131g Clay,Soil,Rocks	25 Jul 2019	No Asbestos Found	<0.01
SE195772.119	BH107_0.1-0.2	Soil	160g Clay,Rocks	25 Jul 2019	No Asbestos Found	<0.01
SE195772.123	BH110_0.1-0.2	Soil	150g Sand,Soil,Rocks	25 Jul 2019	No Asbestos Found	<0.01

RESULTS

Fibre ID in bulk materials — Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE195772.158	ASB1	Other	60x60x6mm Cement Sheet Fragment	25 Jul 2019	Chrysotile Asbestos Detected	

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples , Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602	The sample can be reported “no asbestos found at the reporting limit of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (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.

(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.pv.sgsvr/en-gb/environment.

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Version: 1, Version Date: 16/12/2019

ANALYTICAL REPORT

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Project	**SE195772**	SGS Reference	**ME311375 R0**
Order Number	**SE195772**	Date Received	30 Jul 2019
Samples	9	Date Reported	08 Aug 2019

COMMENTS

Whilst SGS laboratories conform to ISO:17025 standards, results of analysis in this report fall outside of the current scope of NATA accreditation .

SIGNATORIES



Vanessa Palamara
Chemist

Parameter	Units	LOR	Sample Number: ME311375.001 Sample Matrix: Soil Sample Date: 24 Jul 2019 Sample Name: SE195772.026	ME311375.002 Soil 24 Jul 2019 SE195772.035	ME311375.003 Soil 24 Jul 2019 SE195772.037	ME311375.004 Soil 24 Jul 2019 SE195772.040
Herbicides in soil MA-84.SL.01 Method: MA84 Tested: 31/7/2019						
Acifluorfen	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Bentazon	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Chloramben	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
24-D	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
24-DB	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dicamba	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
3,5-Dichlorobenzoic acid	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dichloroprop	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dinoseb	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
MCPA	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
MCPP	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
4-Nitrophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Picloram	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
245-T	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
245-TP	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Moisture Content Method: AN002 Tested: 31/7/2019						
% Moisture	%w/w	1	**51.2**	**17.1**	**14.2**	**16.8**

Parameter	Units	LOR	Sample Number: ME311375.005 Sample Matrix: Soil Sample Date: 24 Jul 2019 Sample Name: SE195772.042	ME311375.006 Soil 24 Jul 2019 SE195772.056	ME311375.007 Soil 24 Jul 2019 SE195772.060	ME311375.008 Soil 25 Jul 2019 SE195772.074
Herbicides in soil MA-84.SL.01 Method: MA84 Tested: 31/7/2019						
Acifluorfen	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Bentazon	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Chloramben	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
24-D	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
24-DB	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dicamba	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
3,5-Dichlorobenzoic acid	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dichloroprop	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dinoseb	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
MCPA	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
MCPP	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
4-Nitrophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Picloram	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
245-T	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
245-TP	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Moisture Content Method: AN002 Tested: 31/7/2019						
% Moisture	%w/w	1	**15.1**	**19.0**	**19.4**	**15.4**

Parameter	Units	LOR	Sample Number ME311375.009 Sample Matrix Soil Sample Date 25 Jul 2019 Sample Name SE195772.076
Herbicides in soil MA-84.SL.01 Method: MA84 Tested: 31/7/2019			
Acifluorfen	mg/kg	0.5	<0.5
Bentazon	mg/kg	0.5	<0.5
Chloramben	mg/kg	0.5	<0.5
24-D	mg/kg	0.5	<0.5
24-DB	mg/kg	0.5	<0.5
Dicamba	mg/kg	0.5	<0.5
3,5-Dichlorobenzoic acid	mg/kg	0.5	<0.5
Dichloroprop	mg/kg	0.5	<0.5
Dinoseb	mg/kg	0.5	<0.5
MCPA	mg/kg	0.5	<0.5
MCPP	mg/kg	0.5	<0.5
4-Nitrophenol	mg/kg	0.5	<0.5
Pentachlorophenol	mg/kg	0.5	<0.5
Picloram	mg/kg	0.5	<0.5
245-T	mg/kg	0.5	<0.5
245-TP	mg/kg	0.5	<0.5
Moisture Content Method: AN002 Tested: 31/7/2019			
% Moisture	%w/w	1	**15.8**

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Herbicides in soil MA-84.SL.01 Method: MA84

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
Acifluorfen	LB027854	mg/kg	0.5	<0.5	0%			
Bentazon	LB027854	mg/kg	0.5	<0.5	0%	NA	NA	NA
Chloramben	LB027854	mg/kg	0.5	<0.5	0%			
24-D	LB027854	mg/kg	0.5	<0.5	0%			
24-DB	LB027854	mg/kg	0.5	<0.5	0%			
Dicamba	LB027854	mg/kg	0.5	<0.5	0%			
3,5-Dichlorobenzoic acid	LB027854	mg/kg	0.5	<0.5	0%			
Dichloroprop	LB027854	mg/kg	0.5	<0.5	0%			
Dinoseb	LB027854	mg/kg	0.5	<0.5	0%	NA	NA	NA
MCPA	LB027854	mg/kg	0.5	<0.5	0%			
MCPP	LB027854	mg/kg	0.5	<0.5	0%			
4-Nitrophenol	LB027854	mg/kg	0.5	<0.5	0%	NA	NA	NA
Pentachlorophenol	LB027854	mg/kg	0.5	<0.5	0%	NA		
Picloram	LB027854	mg/kg	0.5	<0.5	0%			
245-T	LB027854	mg/kg	0.5	<0.5	0%			
245-TP	LB027854	mg/kg	0.5	<0.5	0%			

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

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB027857	%w/w	1	1%

METHOD SUMMARY

ME311375 R0

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.
MA84	This method is intended for the determination of chlorinated herbicide compounds by high performance liquid chromatography (HPLC) using Mass Spectrometry Detector. Soil samples are extracted with dichloromethane and tumbled for 4 hours, then solvent exchange to acetonitrile and filtered through 0.45 µm filter disc. The extract is injected into a HPLC and detected by mass spectrometry detector using selective ion monitoring.

FOOTNOTES

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

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

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

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

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

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

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

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

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

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Appendix K – QA/QC Assessment

K1.1 Project QA/QC Protocols

The overall quality assurance comprises an assessment of the reliability of the field procedures and the laboratory results against standard industry practices, documented sampling and analysis plans or remediation action plans. A summary of the project QA/QC protocols to be followed during the investigation works is presented in **Table K-1**.

Table K-1 QA/QC Protocols

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 generally collected directly from the drill auger. Soil samples were placed in 250 gram glass jars, which were filled to minimise headspace, and sealed using Teflon-coated lids.
	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 See **Appendix H** for calibration documentation.
Equipment decontamination	Sampling equipment to be decontaminated after the collection of each soil sample by washing with phosphate-free detergent (such as Decon 90 or Alconox) and potable water, followed by a final distilled water rinse. One rinsate blank would be collected per day and analysed for the primary contaminants. All results should be non-detect.	Yes One rinsate samples were collected in total, during soil investigations (QR1). All results were non-detect.
Transport	Samples were stored in a chilled (with ice bricks) 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
Trip Blanks	Trip Blank (TB) samples were to be prepared and analysed by the primary laboratory for BTEX. Analytical results for this sample were below the laboratory LOR, indicating that ideal sample transport and handling conditions were achieved.	One trip blank (TB) sample (QTB1) was prepared by the primary laboratory, were analysed for BTEX during soil testing. TB results were reported below the laboratory LOR, indicating that ideal sample transport and handling conditions were achieved.

Task	Description	Project
Trip Spikes	Trip spike (TS) samples were to be submitted to the primary laboratory for BTEX analysis, the results for which were reported within the RPD acceptance levels for trip spike recovery. It was therefore concluded that satisfactory sample transport and handling conditions were achieved.	No trip spike samples were analysed during the investigation. PID readings obtained on all samples throughout the investigation program ranged between 0.1-0.9 ppm, and thus analysis of a trip spike sample was not considered warranted.
QA Samples	Field and laboratory QA samples were analysed as follows: ▪ intra-laboratory duplicate samples at a rate of 1 in 20 primary samples (as per NEPM); and ▪ inter-laboratory duplicate samples at a rate of 1 in 20 primary samples (as per NEPM). Field and laboratory acceptable limits between 30–50% RPD as stated by AS 4482.1–2005. 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. Field and laboratory QA samples are summarised in **Table K-2** and calculated RPD values are displayed in **Table K-5** at the end of this section. Copies of laboratory reports are included in **Appendix J**.
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 reports are included in **Appendix L.**
	Appropriate detection limits were used for the analyses to be undertaken.	Practical Quantitation Limits for all tested parameters during the assessment are presented in **Appendix L**, **Tables QC3** and **QC4**.
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.	Assessment of holding times has been undertaken by the laboratory.

Task	Description	Project
Method Blanks	The method blank sample is laboratory prepared, containing 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.	Assessment of method blanks has been undertaken by the laboratory.
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.	Assessment of laboratory duplicates has been undertaken by the laboratory.
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 standards has been undertaken by the laboratory.
Matrix Spikes / Matrix Spike Duplicates (MS/MSD)	MS/MSDs 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.

Task	Description	Project
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.
QA/QC 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.

K1.2 Calculation of Relative Percentage Difference (RPD)

The RPD values were calculated using the following equation:

$$\boldsymbol{RPD = \frac{|C_O - C_R|}{[(C_O + C_R)/2]} \times 100}$$

Where: C_O = Concentration obtained for the primary sample; and
C_R = Concentration obtained for the duplicate or triplicate sample.

K2.1 Field QA/QC Program

The field quality assurance/quality control (QA/QC) samples collected during the works are summarised in **Table K-5** at the end of this section. Inter-lab duplicates were analysed by the secondary laboratory (Envirolab).

Table K-2 Field QA Sampling Program

Matrix	Primary QA Sample	Duplicate (Primary Lab)	Triplicate (Secondary Lab)	Total Duplicates
Soil	BH1_0.1-0.2	QD1	QT1	2
Soil	BH110_0.1-0.2	QD2	QT2	2

K2.2 Field data quality indicators

A discussion of the field data quality indicators is presented in **Table K-3** below.

Table K-3 Field Data Quality Indicators

DQI	Item	Conformance/Comments
Completeness Percentage of useable data from sampling episode (data set).	Each critical location sampled	**Yes**
	SAQP appropriate and complied with	**Yes**
	Appropriate number of field duplicate samples taken	**Yes**
	Experienced sampler	**Yes**
	Field documentation correct	**Yes**
Comparability Confidence [expressed qualitatively] that data may be considered to be equivalent for each sampling and analytical event.	Same sampling method used on each occasion/location	**Yes**
	Experienced sampler	**Yes**
	Same type of samples collected (filtered, size, fractions)	**Yes**
Representativeness Confidence the data is representative of each media present on the site.	Appropriate media sampled according to SAQP	**Yes**
	Each media identified in SAQP sampled	**Yes**
Precision Quantitative measure of the variability (or reproducibility) of data.	SOPs appropriate and complied with	**Yes**
Accuracy (bias) Quantitative measure of the closeness of reported data to the true value.	SOPs appropriate and complied with	**Yes**

K2.3 Conclusion for the field QA/QC

All samples, including field QC samples, were transported to the primary and secondary laboratories under strict Chain-of-Custody conditions and appropriate copies of relevant documentation were included in the respective reports.

The overall completeness of documentation produced under the field program was considered to be adequate for the purposes of drawing valid conclusions regarding the environmental condition of the site.

Based on the results of the field QA/QC data, EI considers the field QA/QC programme carried out during the investigation to be appropriate and the results to be acceptable.

K2.4 Laboratory QA/QC

Primary and intra-laboratory duplicate samples were analysed by SGS located in Alexandria NSW, and inter-laboratory duplicate samples were analysed by Envirolab located in Chatswood NSW. All laboratories are accredited by NATA for the analyses undertaken.

A discussion of the laboratory DQIs is presented below.

Table K-4 Field Data Quality Indicators

DQI	Item	Conformance/Comments
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	**Part**
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**
Representativeness (the confidence (expressed qualitatively) that data are representative of each media present on the site)	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**

DQI	Item	Conformance/Comments
Accuracy (bias) (a quantitative measure of the closeness of reported data to the true value)	Analysis of field blanks	**Yes**
	Analysis of rinsate blanks	**Yes**
	Analysis of method blanks	**Yes**
	Analysis of matrix spikes (MS)	**Yes**
	Analysis of matrix spike duplicates (MSD)	**Yes**
	Analysis of surrogate spikes	**Yes**
	Analysis of reference materials	Not applicable
	Analysis of laboratory control samples	**Yes**

Overall, it is considered that the laboratory data quality objectives for this project have been achieved.

K2.5 Conclusions on Laboratory QA/QC

Based on the laboratory QA/QC results EI considers that the data generally confirms the analytical results for the various phases of laboratory testing were valid and useable for interpretation purposes.

K2.6 Summary of Project QA/QC

The sampling methods (including sample preservation, transport and decontamination procedures) and laboratory methods followed during this investigation works were consistent with EI protocols and were found to meet the DQOs for this project. It is therefore considered that the data is sufficiently precise and accurate and that the results can be used.

Table K-5 **Soil RPD values** **E24287.E02 - Kemps Creek**

Sample identification	Description	Date	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 - Soil Investigation																		
BH1_0.1-0.2	Soil	24/07/2019	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	7	<0.3	14	37	82	0.05	12	130
QD1	BFD of BH1_0.1-0.2		<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	8	<0.3	13	38	73	0.06	14	110
RPD		-	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*13.33*	*0.00*	*7.41*	*2.67*	*11.61*	*18.18*	*15.38*	*16.67*
BH110_0.1-0.2	Soil	25/07/2019	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	2	0.5	11	11	120	<0.05	3.5	2700
QD2	BFD of BH110_0.1-0.2		<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	4	<0.3	10	17	23	<0.05	5.2	630
RPD		-	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	**66.67**	*50.00*	*9.52*	*42.86*	**135.66**	*0.00*	*39.08*	**124.32**
Inter-laboratory Duplicate - Soil Investigation																		
BH1_0.1-0.2	Soil	24/07/2019	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	7	<0.3	14	37	82	0.05	12	130
QT1	BFD of BH1_0.1-0.2		<25	<50	<100	<100	<0.2	<0.5	<1	<3	8	<0.4	17	33	89	<0.1	12	240
RPD		-	*0.00*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*13.33*	*NA*	*19.35*	*11.43*	*8.19*	**66.67**	*0.00*	**59.46**
BH110_0.1-0.2	Soil	25/07/2019	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	2	0.5	11	11	120	<0.05	3.5	2700
QT2	BFD of BH110_0.1-0.2		<25	<50	<100	<100	<0.2	<0.5	<1	<3	<4	<0.4	11	8	15	<0.1	5	470
RPD		*0*	*0.00*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	**66.67**	*22.22*	*0.00*	*31.58*	**155.56**	*NA*	*35.29*	**140.69**
Rinsate Blanks																		
QR1	Equipment Rinsate	14/08/2019	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<1	<0.1	<1	<1	<1	<0.0001	<1	<5
Trip Blanks																		
QTB1	Soil Trip Blank	Laboratory Prepared	-				<0.1	<0.1	<0.1	<0.3	-	-	-	-	-	-	-	-

NOTE: All results are reported in mg/kg (soil) or µg/L (water)

66.67	RPD calculated by halving detection limit exceeds 30-50% range referenced from AS4482.1 (2005)
52.87	RPD exceeds 30-50% range referenced from AS4482.1 (2005)

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

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Appendix L – Laboratory QA/QC Policies and DQOs

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Table QC1 - Containers, Preservation Requirements and Holding Times - Soil			
Parameter	Container	Preservation	Maximum Holding Time
Acid digestible metals and metalloids - Total and TCLP (As,Cd.,Cu,Cr,Ni,Pb,Zn)	Glass with Teflon Lid	Nil	6 months
Mercury	Glass with Teflon Lid	Nil	28 days
TPH / BTEX / VOC / SVOC / CHC	Glass with Teflon Lid	4°C, zero headspace	14 days
PAHs (total and TCLP)	Glass with Teflon Lid	4°C [1]	14 days
Phenols	Glass with Teflon Lid	4°C [1]	14 days
OCPs, OPPs and total PCBs	Glass with Teflon Lid	4°C [1]	14 days
Asbestos	Sealed Plastic Bag	Nil	N/A

Table QC2 - Containers, Preservation Requirements and Holding Times - Water			
Parameter	Container Volume (mL)	Preservation	Maximum Holding Time
Heavy Metals	125mL Plastic	Field filtration 0.45μm HNO_3 / 4°C	6 months
Cyanide	125mL Amber Glass	pH > 12 NaOH / 4°C	6 months
TPH (C6-C9) / BTEX / VOCs SVOCs / CHCs	4 x 43mL Glass	HCl / 4°C [1]	14 days
TPH (C10-C36) / PAH / Phenolics OCP / OPP / TDS / pH	3 x 1L Amber Glass	None / 4°C [1]	28 days

Notes: [1] = Extraction within 14 days, Analysis within 40 days.

Table QC3 - Analytical Parameters, PQLs and Methods - Soil			
Parameter	**Unit**	**PQL**	**Method Reference**
Metals in Soil			
Arsenic - As[1]	mg / kg	1	USEPA 200.7
Cadmium - Cd[1]	mg / kg	0.5	USEPA 200.7
Chromium - Cr[1]	mg / kg	1	USEPA 200.7
Copper - Cu[1]	mg / kg	1	USEPA 200.7
Lead - Pb[1]	mg / kg	1	USEPA 200.7
Mercury - Hg[2]	mg / kg	0.1	USEPA 7471A
Nickel - Ni[1]	mg / kg	1	USEPA 200.7
Zinc - Zn[1]	mg / kg	1	USEPA 200.7
Total Petroleum Hydrocarbons (TPHs) in Soil			
C_6-C_9 fraction	mg / kg	25	USEPA 8260
C_{10}-C_{14} fraction	mg / kg	50	USEPA 8000
C_{15}-C_{28} fraction	mg / kg	100	USEPA 8000
C_{29}-C_{36} fraction	mg / kg	100	USEPA 8000
BTEX in Soil			
Benzene	mg / kg	1	USEPA 8260
Toluene	mg / kg	1	USEPA 8260
Ethylbenzene	mg / kg	1	USEPA 8260
m & p Xylene	mg / kg	2	USEPA 8260
o- Xylene	mg / kg	1	USEPA 8260
Other Organic Contaminants in Soil			
PAHs	mg / kg	0.05-0.2	USEPA 8270
CHCs	mg / kg	1	USEPA 8260
VOCs	mg / kg	1	USEPA 8260
SVOCs	mg / kg	1	USEPA 8260
OCPs	mg / kg	0.1	USEPA 8140, 8080
OPPs	mg / kg	0.1	USEPA 8140, 8080
PCBs	mg / kg	0.1	USEPA 8080
Phenolics	mg / kg	5	APHA 5530
Asbestos			
Asbestos	mg / kg	Presence / Absence	AS4964-2004

Notes:

1. Acid Soluble Metals by ICP-AES
2. Total Recoverable Mercury

Table QC4 - Analytical Parameters, PQLs and Methods - Groundwater

Parameter	Unit	PQL	Method
Heavy Metals			
Antimony - Sb	µg/L	1	USEPA 200.8
Arsenic - As	µg/L	1	USEPA 200.8
Beryllium - Be	µg/L	0.5	USEPA 200.8
Cadmium - Cd	µg/L	0.1	USEPA 200.8
Chromium - Cr	µg/L	1	USEPA 200.8
Cobalt - Co	µg/L	1	USEPA 200.8
Copper - Cu	µg/L	1	USEPA 200.8
Lead - Pb	µg/L	1	USEPA 200.8
Mercury - Hg	µg/L	0.5	USEPA 7471A
Molybdenum - Mo	µg/L	1	USEPA 200.8
Nickel - Ni	µg/L	1	USEPA 200.8
Selenium - Se	µg/L	1	USEPA 200.8
Silver - Ag	µg/L	1	USEPA 200.8
Tin (inorg.) - Sn	µg/L	1	USEPA 200.8
Nickel - Ni	µg/L	1	USEPA 200.8
Zinc - Zn	µg/L	1	USEPA 200.8
Total Petroleum Hydrocarbons (TPHs)			
C_6-C_9 fraction	µg/L	10	USEPA 8220A / 8000
C_{10}-C_{14} fraction	µg/L	50	USEPA 8000
C_{15}-C_{28} fraction	µg/L	100	USEPA 8000
C_{29}-C_{36} fraction	µg/L	100	USEPA 8000
BTEX			
Benzene	µg/L	1	USEPA 8220A
Toluene	µg/L	1	USEPA 8220A
Ethylbenzene	µg/L	1	USEPA 8220A
m- & p-Xylene	µg/L	2	USEPA 8220A
o-Xylene	µg/L	1	USEPA 8220A
Polyciclic Aromatic Hydrocarbons (PAHs)			
PAHs	µg/L	0.1	USEPA 8270
Benzo(a)pyrene	µg/L	0.01	USEPA 8270
OrganoChlorine Pesticides (OCPs)			
Aldrin	µg/L	0.001	USEPA 8081
Chlordane	µg/L	0.001	USEPA 8081
DDT	µg/L	0.001	USEPA 8081
Dieldrin	µg/L	0.001	USEPA 8081
Endosulfan	µg/L	0.001	USEPA 8081
Endrin	µg/L	0.001	USEPA 8081
Heptachlor	µg/L	0.001	USEPA 8081
Lindane	µg/L	0.001	USEPA 8081
Toxaphene	µg/L	0.001	USEPA 8081

Parameter	Unit	PQL	Method
Chlorinated Hydrocarbons (CHCs)			
1,2-dichlorobenzene	µg/L	1	USEPA 8260B
1,3-dichlorobenzene	µg/L	1	USEPA 8260B
1,4-dichlorobenzene	µg/L	1	USEPA 8260B
1,2,3-trichlorobenzene	µg/L	1	USEPA 8260B
1,2,4-trichlorobenzene	µg/L	1	USEPA 8260B
Hexachlorobutadeine	µg/L	1	USEPA 8260B
1,1,2-trichloroethane	µg/L	1	USEPA 8260B
Hexachloroethane	µg/L	10	USEPA 8270D
Other CHCs	µg/L	1	USEPA 8260B
Volatile Organic Compounds (VOCs)			
Aniline	µg/L	10	USEPA 8260B
2,4-dichloroaniline	µg/L	10	USEPA 8260B
3,4-dichloroaniline	µg/L	10	USEPA 8260B
Nitrobenzene	µg/L	50	USEPA 8260B
2,4-dinitrotoluene	µg/L	50	USEPA 8260B
2,4,6-trinitrotoluene	µg/L	50	USEPA 8260B
Phenolic Compounds			
Phenol	µg/L	10	USEPA 8041
2-chlorophenol	µg/L	10	USEPA 8041
4-chlorophenol	µg/L	10	USEPA 8041
2, 4-dichlorophenol	µg/L	10	USEPA 8041
2,4,6-trichlorophenol	µg/L	10	USEPA 8041
2,3,4,6-tetrachlorophenol	µg/L	10	USEPA 8041
Pentachlorophenol	µg/L	10	USEPA 8041
2,4-dinitrophenol	µg/L	10	USEPA 8041
Miscellaneous Parameters			
Total Cyanide	µg/L	5	APHA 4500C&E-CN
Fluoride	µg/L	10	APHA 4500 F-C
Salinity (TDS)	mg/L	1	APHA 2510
pH	units	0.1	APHA 4500H+
OrganoPhosphate Pesticides (OPPs)			
Azinphos Methyl	µg/L	0.01	USEPA 8141
Chloropyrifos	µg/L	0.01	USEPA 8141
Diazinon	µg/L	0.01	USEPA 8141
Dimethoate	µg/L	0.01	USEPA 8141
Fenitrothion	µg/L	0.01	USEPA 8141
Malathion	µg/L	0.01	USEPA 8141
Parathion	µg/L	0.01	USEPA 8141
Temephos	µg/L	0.01	USEPA 8141
Polychlorinated Biphenyls (PCBs)			
Individual PCBs	µg/L	0.01	USEPA 8081

Table QC5 - QC Sample Data Acceptance Criteria

QC Sample Type	Method of Assessment	Acceptable Range
Field QC		
Blind Duplicates and Split Samples	The assessment of split duplicate is undertaken by calculating the Relative Percent Difference (RPD) of the duplicate concentration compared with the primary sample concentration. The RPD is defined as: $RPD = 100 \times \frac{\lvert X_1 - X_2 \rvert}{\text{mean}(X1, X2)}$ Where: X_1 and X_2 are the concentrations of the primary and duplicate samples.	The acceptable range depends upon the levels detected: - 0-150% RPD (when the average concentration is <5 times the LOR/PQL) - 0-75% RPD (when the average concentration is 5 to 10 times the LOR/PQL) - 0-50% RPD (when the average concentration is >10 times the LOR/PQL)
Rinsate & Trip Blanks	Each blank is analysed as per the original samples.	Analytical Result <LOR/PQL
Laboratory prepared Trip Spike	The Trip Spike is analysed after returning from the field and the % recovery of the known spike is calculated.	70 - 130%
Laboratory QC		
Laboratory Duplicates	Assessment of Lab Duplicate RPD as per Blind Duplicates and Split Samples.	Lab Duplicate RPD < 15% (Inorganics) Lab Duplicate RPD < 30% (Organics) for sample results > 10 LOR
Surrogates	Assessment is undertaken by determining the percent recovery of the known surrogate spike (SS) or addition to the sample.	at least 2 SS recoveries to be within 70-130% subject to matrix effects (Organics)
Matrix Spikes Laboratory Control Samples	$\%\ \text{Recovery} = 100 \times \frac{C - A}{B}$ Where: A = Concentration of analyte determined in the original sample; B = Added Concentration; and C = Calculated Concentration.	80-120% (Inorganics / Metals) 60-140% (Organics) 10-140% (SVOC and Speciated Phenols) If the result is outside the above ranges, the result must be <3x Standard Deviation of the Historical Mean (calculated over the past 12 months).
Sample Matrix Spike Duplicates	Recovery RPD	<30% (Inorganics & Organics)
Calibration Check Standars	Continuous Calibration Verification (CCV)	CCV must be within ±15% (inorganics) CCV must be within ±25% (inorganics)
Reagent, Method & Calibration Check Blanks	Each blank is analysed as per the original samples.	Analytical Result <LOR/PQL

Note: PQL - Laboratory Practical Quantitation Limit (PQL) or the minimum detection limit for a particular analyte.
LOR = Limit of Reporting

SGS Environmental Services is accredited by NATA for Chemical Testing (Reg.No.2562) and Quality System compliance to ISO/IEC 17025. The QC parameters contained within are designed to meet NEPM 1999 requirements.

Quality Control samples included in any analytical run are listed below.

Reagent/Analysis Blank (BLK) **Method Blank (MB)**	Sample free reagents carried through the preparation/extraction/digestion procedure and analysed at the beginning of every sample batch analysis. A reagent blank is prepared and analysed with every batch of samples plus with each new batch of solvent prior to use.
Sample Matrix Spike (MS) & Matrix Spike Duplicate (MSD)	Sample replicates spiked with identical concentrations of target analyte(s). The spiking occurs during the sample preparation and prior to the extraction/digestion procedure. They are used to document the precision and bias of a method in a given sample matrix. Where there is not enough sample available to prepare a spiked sample, another known soil/sand or water may be used. A duplicate spiked sample is analysed at least every 20 samples.
Surrogate Spike (SS)	At least one but up to three surrogate compounds are added to all samples requiring analysis for organics prior to extraction. Used to determine the extraction efficiency. They are organic compounds which are similar to the target analyte(s) in chemical composition and behaviour in the analytical process, but which are not normally found in environmental samples. Where possible they are surrogate compounds recommended by the USEPA.
Control Matrix Spike (CMS)	To ensure spike recoveries can be determined for every batch of samples a control matrix is spiked with identical concentrations of target analyte(s) and then analysed. These results allow recoveries to be determined in the event that the matrix spikes are unusable (eg. matrix spikes performed on heavily contaminated samples). These are analysed at least every 20 samples.
Internal Standard (IS)	Added to all samples requiring analysis for organics (where relevant) after the extraction process; the compounds serve to give a standard of retention time and response, which is invariant from run-to-run with the instruments. Where possible they are standard compounds recommended by the USEPA.
Lab Duplicates (D)	A separate portion of a sample being analysed that is treated the same as the other samples in the batch. One duplicate is processed at least every 10 samples.
Lab Control Standards/Samples (LCS)	Prepared from a source independent of the calibration standards. At least one control standard is included in each run to confirm calibration validity. Thereafter they are analysed at least every one in 20 samples plus at the end of each analytical run. This data is not reported.
Continuous Calibration Verification (CCV) or **Calibration Check Standard & Blank**	A calibration check standard or CCV and blank are run after every 20 samples of an instrumental analysis run to assess analytical drift. Calibration Standards are checked old versus new with a criteria of ±10%

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Quality Assurance Programs are listed below:

Statistical analysis of Quality Control data (SQC)	Quality control data is plotted on control charts using the APHA procedure with warning and control limits at 2 and 3 standard deviations respectively. See also QMS Procedure "Statistical Quality Control".
Certified Reference Materials (CRM/SRM)	Certified Reference Materials and Standards are regularly analysed. These materials/standards have certified reference values for various parameters.
Proficiency Testing	Regular proficiency test samples are analysed by our laboratories. SGS Environmental participates in a number of programs. Results and proficiency status are compiled and sent to participating laboratory post data interpretation. Failure to comply with acceptable values result in further investigations.
Inter-laboratory & Intra-laboratory Testing	SGS Environmental Services has schedules in the Quality Systems to participate in Inter/Intra laboratory testing conducted internally and by other parties.
Data Acceptance Criteria Unless otherwise specified in the method or method manual the following general criteria apply to all inorganic tests. All recoveries are to be reported to 3 significant figures.	Failure to meet the internal acceptance criteria will result in sample batch repeats dependent upon investigation outcomes. For data to be accepted: <u>Inorganics (water samples)</u> • For all inorganic analytes the Reagent & Method Blanks must be less than the LOR. • The Calibration Check Standards or Continuous Calibration Verification (CCV) must be within ±15%. • Control Standards must be 80-120% of the accepted value. • The Calibration Check Blanks must be less than the LOR. • Lab Duplicates RPD to be <15%*. Note: If client <u>field</u> duplicates do not meet this criteria it may indicate heterogeneity and shall be noted on the data reports for QC samples. • Sample (and if applicable Control) Matrix Spike♬ Duplicate recovery RPD to be <30%. • Where CRMs are used, results to be within ±2 standard deviations of the expected value. <u>Inorganics (soil samples)</u> • For all inorganic analytes the Reagent & Method Blanks must be less than the LOR. • The Calibration Check Standards or Continuous Calibration Verification (CCV) must be within ±15%. • Control Standards must be 80-120% of the accepted value. • The Calibration Check Blanks must be less than the LOR. • Lab duplicate RPD to be <30%* for sample results greater than 10 times LOR. • Sample Matrix Spike Duplicate (MS♬/MSD) recovery RPD to be <30%. In the event that the matrix spike has been applied to samples whose matrix or contamination is problematic to the method then these acceptance criteria apply to the Control Matrix Spike (CMS/D). • Where CRMs are used, results to be within ± 2 standard deviations of the expected value.

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Data Acceptance Criteria Unless otherwise specified in the method or method manual the following general criteria apply to all organic tests. All recoveries are to be reported to 3 significant figures.	Organics • Volatile & extractable Reagent & Method Blanks must contain levels less than or equal to LOR. • The Calibration Check Standards or Continuous Calibration Verification (CCV) must be within ±25%. Some analytes may have specific criteria. • Control Standards (LCS/CMS) and Certified Reference Materials (CRM) recoveries are to be within established control limits or as a default 60-140% unless compound specific limits apply. • Retention times are to vary by no more than 0.2 min. • **At least two of three** routine level soil sample Surrogate Spike (SS) recoveries 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 acceptance criterion. Any recoveries outside these limits will have comment. • Water sample Surrogates Spike (SS) recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion. Any recoveries outside these limits will have comment. • Lab Duplicates (D) must have a RPD <30%*. • Sample Matrix Spike Duplicate (MS♬/MSD) recovery RPD to be <30%. In the event that the matrix spike has been applied to samples whose matrix or contamination is problematic to the method then these acceptance criteria apply to the Control Matrix Spike (CMS/D).

*Only if results are at least 10 times the LOR otherwise no acceptance criteria for RPD's apply. Application of more stringent criteria shall be applied for clean water sample from water boards and any other nominated client contracts. Nominal 10xLOR criteria are dropped to 5xLOR where specified.
♬Matrix do not readily equate to definitive recovery due to inherent matrix interferences and thus do not have recovery compliance values set. As a guide inorganic recoveries should be between 70-130% and for organics 60-130%

Batch Structure Summary

An analytical batch is nominally considered as 20 samples or smaller. As a standard template the following should be **used as a guide** according to the above Quality Control Types:

1	MB	16	UNK_DUP
2	STD1	17	MS
3	STD2	18	MS_DUP
4	STD3	19	UNK 11
5	LCS	20	UNK 12
6	BLK	21	UNK 13
7	UNK 1	22	UNK 14
8	UNK 2	23	UNK 15
9	UNK 3	24	UNK 16
10	UNK 4	25	UNK 17
11	UNK 5	26	UNK 18
12	UNK 6	27	UNK 19
13	UNK 7	28	UNK 20 (SS if applicable)
14	UNK 8	29	UNK_DUP
15	UNK 9	30	CCV
16	UNK 10 (SS if applicable)	31	CRM / SRM / CMS / LCS

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STATEMENT OF QA/QC PERFORMANCE

SE195772 R0

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	**E24287 859 Mamre Rd Kemps Creek**
Order Number	**E24287**
Samples	158

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	**SE195772 R0**
Date Received	26 Jul 2019
Date Reported	08 Aug 2019

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	Conductivity and TDS by Calculation - Soil	2 items
	pH in soil (1:5)	2 items
	Soluble Anions (1:5) in Soil by Ion Chromatography	2 items
Analysis Date	Conductivity and TDS by Calculation - Soil	8 items
Duplicate	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item

SAMPLE SUMMARY

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	156 Soil, 1 Water, 1
Date documentation received	26/7/2019	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	6.5°C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

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HOLDING TIME SUMMARY

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Conductivity and TDS by Calculation - Soil

Method: ME-(AU)-[ENV]AN106

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10_0.1-0.2	SE195772.011	LB179963	24 Jul 2019	26 Jul 2019	31 Jul 2019	01 Aug 2019†	31 Jul 2019	02 Aug 2019†
BH10_1-1.1	SE195772.012	LB179963	24 Jul 2019	26 Jul 2019	31 Jul 2019	01 Aug 2019†	31 Jul 2019	02 Aug 2019†
BH95_0.1-0.2	SE195772.102	LB179963	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	01 Aug 2019	02 Aug 2019†
BH95_0.5-0.6	SE195772.103	LB179963	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	01 Aug 2019	02 Aug 2019†
BH95_3.8-3.9	SE195772.104	LB179963	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	01 Aug 2019	02 Aug 2019†
BH105_0.1-0.2	SE195772.115	LB179963	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	01 Aug 2019	02 Aug 2019†
BH105_0.4-0.5	SE195772.116	LB179963	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	01 Aug 2019	02 Aug 2019†
BH105_4-0-4.1	SE195772.117	LB179963	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	01 Aug 2019	02 Aug 2019†

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
BH10_0.1-0.2	SE195772.011	LB179777	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	31 Jul 2019
BH10_1-1.1	SE195772.012	LB179777	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	31 Jul 2019
BH95_0.1-0.2	SE195772.102	LB179777	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	31 Jul 2019
BH95_0.5-0.6	SE195772.103	LB179777	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	31 Jul 2019
BH95_3.8-3.9	SE195772.104	LB179777	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	31 Jul 2019
BH105_0.1-0.2	SE195772.115	LB179777	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	31 Jul 2019
BH105_0.4-0.5	SE195772.116	LB179777	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	31 Jul 2019
BH105_4-0-4.1	SE195772.117	LB179777	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	31 Jul 2019

Fibre ID in bulk materials

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
ASB1	SE195772.158	LB180363	25 Jul 2019	26 Jul 2019	24 Jul 2020	07 Aug 2019	24 Jul 2020	07 Aug 2019

Fibre Identification in soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.1-0.2	SE195772.001	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH7_0.1-0.2	SE195772.008	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH8_0.1-0.2	SE195772.009	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH14_0.1-0.2	SE195772.016	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH15_0.1-0.2	SE195772.017	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH17_0.1-0.2	SE195772.019	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH19_0.1-0.2	SE195772.021	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH20_0.1-0.2	SE195772.022	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH21_0.1-0.2	SE195772.023	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH22_0.1-0.2	SE195772.025	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH23_0.1-0.2	SE195772.026	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH24_0.1-0.2	SE195772.027	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH27_0.1-0.2	SE195772.030	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH30_0.1-0.2	SE195772.033	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH45_0.1-0.2	SE195772.048	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH47_0.1-0.2	SE195772.051	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH50_0.1-0.2	SE195772.054	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH57_0.1-0.2	SE195772.061	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH58_0.1-0.2	SE195772.062	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH59_0.1-0.2	SE195772.064	LB180312	24 Jul 2019	26 Jul 2019	23 Jul 2020	06 Aug 2019	23 Jul 2020	07 Aug 2019
BH62_0.1-0.2	SE195772.067	LB180312	25 Jul 2019	26 Jul 2019	24 Jul 2020	06 Aug 2019	24 Jul 2020	07 Aug 2019
BH90_0.1-0.2	SE195772.097	LB180312	25 Jul 2019	26 Jul 2019	24 Jul 2020	06 Aug 2019	24 Jul 2020	07 Aug 2019
BH91_0.1-0.2	SE195772.098	LB180312	25 Jul 2019	26 Jul 2019	24 Jul 2020	06 Aug 2019	24 Jul 2020	07 Aug 2019
BH107_0.1-0.2	SE195772.119	LB180312	25 Jul 2019	26 Jul 2019	24 Jul 2020	06 Aug 2019	24 Jul 2020	07 Aug 2019
BH110_0.1-0.2	SE195772.123	LB180312	25 Jul 2019	26 Jul 2019	24 Jul 2020	06 Aug 2019	24 Jul 2020	07 Aug 2019

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
QR1	SE195772.127	LB179654	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	30 Jul 2019

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.1-0.2	SE195772.001	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH1_0.7-0.8	SE195772.002	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019

Document Set ID: 8964019
Version: 1, Version Date: 16/12/2019

HOLDING TIME SUMMARY

SE195772 R0

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Mercury in Soil (continued) — **Method: ME-(AU)-[ENV]AN312**

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7_0.1-0.2	SE195772.008	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH8_0.1-0.2	SE195772.009	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH14_0.1-0.2	SE195772.016	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH15_0.1-0.2	SE195772.017	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH17_0.1-0.2	SE195772.019	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH19_0.1-0.2	SE195772.021	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH20_0.1-0.2	SE195772.022	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH21_0.1-0.2	SE195772.023	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH21_0.6-0.7	SE195772.024	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH22_0.1-0.2	SE195772.025	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH23_0.1-0.2	SE195772.026	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH24_0.1-0.2	SE195772.027	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH27_0.1-0.2	SE195772.030	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH29_0.4-0.5	SE195772.032	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH30_0.1-0.2	SE195772.033	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH45_0.1-0.2	SE195772.048	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH45_0.3-0.4	SE195772.049	LB179698	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH47_0.1-0.2	SE195772.051	LB179699	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH50_0.1-0.2	SE195772.054	LB179699	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH57_0.1-0.2	SE195772.061	LB179699	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH58_0.1-0.2	SE195772.062	LB179699	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH58_0.4-0.5	SE195772.063	LB179699	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH59_0.1-0.2	SE195772.064	LB179699	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
BH62_0.1-0.2	SE195772.067	LB179699	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
BH72_0.5-0.6	SE195772.078	LB179699	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
BH82_0.4-0.5	SE195772.089	LB179699	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
BH90_0.1-0.2	SE195772.097	LB179699	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
BH91_0.1-0.2	SE195772.098	LB179699	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
BH101_0.7-0.8	SE195772.111	LB179699	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
BH103_0.1-0.2	SE195772.113	LB179699	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
BH107_0.1-0.2	SE195772.119	LB179699	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
BH108_0.6-0.7	SE195772.121	LB179699	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
BH110_0.1-0.2	SE195772.123	LB179699	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
BH110_0.6-0.7	SE195772.124	LB179699	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
QD1	SE195772.125	LB179699	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
QD2	SE195772.126	LB179699	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
C1	SE195772.129	LB179700	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
C2	SE195772.130	LB179700	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
C3	SE195772.131	LB179700	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
C4	SE195772.132	LB179700	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
C5	SE195772.133	LB179700	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
C6	SE195772.134	LB179700	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
C7	SE195772.135	LB179700	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
C8	SE195772.136	LB179700	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
C9	SE195772.137	LB179700	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
C10	SE195772.138	LB179700	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
C11	SE195772.139	LB179700	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
C12	SE195772.140	LB179700	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
C13	SE195772.141	LB179700	24 Jul 2019	26 Jul 2019	21 Aug 2019	30 Jul 2019	21 Aug 2019	02 Aug 2019
C14	SE195772.142	LB179700	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
C15	SE195772.143	LB179700	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
C16	SE195772.144	LB179700	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
C17	SE195772.145	LB179700	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
C18	SE195772.146	LB179700	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
C19	SE195772.147	LB179700	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
C20	SE195772.148	LB179701	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
C21	SE195772.149	LB179701	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
C23	SE195772.151	LB179701	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
C24	SE195772.152	LB179701	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
C25	SE195772.153	LB179701	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019

HOLDING TIME SUMMARY

SE195772 R0

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Mercury in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
C26	SE195772.154	LB179701	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
C27	SE195772.155	LB179701	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
C28	SE195772.156	LB179701	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019
C29	SE195772.157	LB179701	25 Jul 2019	26 Jul 2019	22 Aug 2019	30 Jul 2019	22 Aug 2019	02 Aug 2019

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.1-0.2	SE195772.001	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH1_0.7-0.8	SE195772.002	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH7_0.1-0.2	SE195772.008	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH8_0.1-0.2	SE195772.009	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH10_0.1-0.2	SE195772.011	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH10_1-1.1	SE195772.012	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH14_0.1-0.2	SE195772.016	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH15_0.1-0.2	SE195772.017	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH17_0.1-0.2	SE195772.019	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH19_0.1-0.2	SE195772.021	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH20_0.1-0.2	SE195772.022	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH21_0.1-0.2	SE195772.023	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH21_0.6-0.7	SE195772.024	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH22_0.1-0.2	SE195772.025	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH23_0.1-0.2	SE195772.026	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH24_0.1-0.2	SE195772.027	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH27_0.1-0.2	SE195772.030	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH29_0.4-0.5	SE195772.032	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH30_0.1-0.2	SE195772.033	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH45_0.1-0.2	SE195772.048	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH45_0.3-0.4	SE195772.049	LB179690	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH47_0.1-0.2	SE195772.051	LB179692	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH50_0.1-0.2	SE195772.054	LB179692	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH57_0.1-0.2	SE195772.061	LB179692	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH58_0.1-0.2	SE195772.062	LB179692	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH58_0.4-0.5	SE195772.063	LB179692	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH59_0.1-0.2	SE195772.064	LB179692	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH62_0.1-0.2	SE195772.067	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH72_0.5-0.6	SE195772.078	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH82_0.4-0.5	SE195772.089	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH90_0.1-0.2	SE195772.097	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH91_0.1-0.2	SE195772.098	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH95_0.1-0.2	SE195772.102	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH95_0.5-0.6	SE195772.103	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH95_3.8-3.9	SE195772.104	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH101_0.7-0.8	SE195772.111	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH103_0.1-0.2	SE195772.113	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH105_0.1-0.2	SE195772.115	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH105_0.4-0.5	SE195772.116	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH105_4-0-4.1	SE195772.117	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH107_0.1-0.2	SE195772.119	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH108_0.6-0.7	SE195772.121	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH110_0.1-0.2	SE195772.123	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
BH110_0.6-0.7	SE195772.124	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
QD1	SE195772.125	LB179692	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
QD2	SE195772.126	LB179692	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
TRIP BLANK	SE195772.128	LB179692	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C1	SE195772.129	LB179692	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C2	SE195772.130	LB179692	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C3	SE195772.131	LB179692	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C4	SE195772.132	LB179692	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C5	SE195772.133	LB179692	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C6	SE195772.134	LB179693	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019

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HOLDING TIME SUMMARY

SE195772 R0

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Moisture Content (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
C7	SE195772.135	LB179693	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C8	SE195772.136	LB179693	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C9	SE195772.137	LB179693	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C10	SE195772.138	LB179693	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C11	SE195772.139	LB179693	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C12	SE195772.140	LB179693	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C13	SE195772.141	LB179693	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C14	SE195772.142	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C15	SE195772.143	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C16	SE195772.144	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C17	SE195772.145	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C18	SE195772.146	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C19	SE195772.147	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C20	SE195772.148	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C21	SE195772.149	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C22	SE195772.150	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C23	SE195772.151	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C24	SE195772.152	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C25	SE195772.153	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C26	SE195772.154	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C27	SE195772.155	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C28	SE195772.156	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019
C29	SE195772.157	LB179693	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	04 Aug 2019	01 Aug 2019

OC Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.1-0.2	SE195772.001	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH1_0.7-0.8	SE195772.002	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH7_0.1-0.2	SE195772.008	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH8_0.1-0.2	SE195772.009	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH14_0.1-0.2	SE195772.016	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH15_0.1-0.2	SE195772.017	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH17_0.1-0.2	SE195772.019	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH19_0.1-0.2	SE195772.021	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH20_0.1-0.2	SE195772.022	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH21_0.1-0.2	SE195772.023	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH21_0.6-0.7	SE195772.024	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH22_0.1-0.2	SE195772.025	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH23_0.1-0.2	SE195772.026	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH24_0.1-0.2	SE195772.027	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH27_0.1-0.2	SE195772.030	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH29_0.4-0.5	SE195772.032	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH30_0.1-0.2	SE195772.033	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH45_0.1-0.2	SE195772.048	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH45_0.3-0.4	SE195772.049	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH47_0.1-0.2	SE195772.051	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH50_0.1-0.2	SE195772.054	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH57_0.1-0.2	SE195772.061	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH58_0.1-0.2	SE195772.062	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH58_0.4-0.5	SE195772.063	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH59_0.1-0.2	SE195772.064	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH62_0.1-0.2	SE195772.067	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH72_0.5-0.6	SE195772.078	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH82_0.4-0.5	SE195772.089	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH90_0.1-0.2	SE195772.097	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH91_0.1-0.2	SE195772.098	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH101_0.7-0.8	SE195772.111	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH103_0.1-0.2	SE195772.113	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH107_0.1-0.2	SE195772.119	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH108_0.6-0.7	SE195772.121	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019

HOLDING TIME SUMMARY

SE195772 R0

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

OC Pesticides in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH110_0.1-0.2	SE195772.123	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH110_0.6-0.7	SE195772.124	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
QD1	SE195772.125	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
QD2	SE195772.126	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C1	SE195772.129	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C2	SE195772.130	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C3	SE195772.131	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C4	SE195772.132	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C5	SE195772.133	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C6	SE195772.134	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C7	SE195772.135	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C8	SE195772.136	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C9	SE195772.137	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C10	SE195772.138	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C11	SE195772.139	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C12	SE195772.140	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C13	SE195772.141	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C14	SE195772.142	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C15	SE195772.143	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C16	SE195772.144	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C17	SE195772.145	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C18	SE195772.146	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C19	SE195772.147	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C20	SE195772.148	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C21	SE195772.149	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C22	SE195772.150	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C23	SE195772.151	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C24	SE195772.152	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C25	SE195772.153	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C26	SE195772.154	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C27	SE195772.155	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C28	SE195772.156	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C29	SE195772.157	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019

OP Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.1-0.2	SE195772.001	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	01 Aug 2019
BH1_0.7-0.8	SE195772.002	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	07 Aug 2019
BH7_0.1-0.2	SE195772.008	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH8_0.1-0.2	SE195772.009	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH14_0.1-0.2	SE195772.016	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH15_0.1-0.2	SE195772.017	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH17_0.1-0.2	SE195772.019	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH19_0.1-0.2	SE195772.021	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH20_0.1-0.2	SE195772.022	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH21_0.1-0.2	SE195772.023	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH21_0.6-0.7	SE195772.024	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	07 Aug 2019
BH22_0.1-0.2	SE195772.025	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH23_0.1-0.2	SE195772.026	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH24_0.1-0.2	SE195772.027	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH27_0.1-0.2	SE195772.030	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH29_0.4-0.5	SE195772.032	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	07 Aug 2019
BH30_0.1-0.2	SE195772.033	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH45_0.1-0.2	SE195772.048	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH45_0.3-0.4	SE195772.049	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	07 Aug 2019
BH47_0.1-0.2	SE195772.051	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH50_0.1-0.2	SE195772.054	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH57_0.1-0.2	SE195772.061	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH58_0.1-0.2	SE195772.062	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH58_0.4-0.5	SE195772.063	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	07 Aug 2019

HOLDING TIME SUMMARY

SE195772 R0

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

OP Pesticides in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH59_0.1-0.2	SE195772.064	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH62_0.1-0.2	SE195772.067	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH72_0.5-0.6	SE195772.078	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	07 Aug 2019
BH82_0.4-0.5	SE195772.089	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	07 Aug 2019
BH90_0.1-0.2	SE195772.097	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH91_0.1-0.2	SE195772.098	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH101_0.7-0.8	SE195772.111	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	07 Aug 2019
BH103_0.1-0.2	SE195772.113	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH107_0.1-0.2	SE195772.119	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH108_0.6-0.7	SE195772.121	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	07 Aug 2019
BH110_0.1-0.2	SE195772.123	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH110_0.6-0.7	SE195772.124	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	07 Aug 2019
QD1	SE195772.125	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	07 Aug 2019
QD2	SE195772.126	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	07 Aug 2019
C1	SE195772.129	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C2	SE195772.130	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C3	SE195772.131	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C4	SE195772.132	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C5	SE195772.133	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C6	SE195772.134	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C7	SE195772.135	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C8	SE195772.136	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C9	SE195772.137	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C10	SE195772.138	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C11	SE195772.139	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C12	SE195772.140	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C13	SE195772.141	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C14	SE195772.142	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C15	SE195772.143	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C16	SE195772.144	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C17	SE195772.145	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C18	SE195772.146	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C19	SE195772.147	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C20	SE195772.148	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C21	SE195772.149	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C22	SE195772.150	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	07 Aug 2019
C23	SE195772.151	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C24	SE195772.152	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C25	SE195772.153	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C26	SE195772.154	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C27	SE195772.155	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C28	SE195772.156	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C29	SE195772.157	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019

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_0.1-0.2	SE195772.001	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	01 Aug 2019
BH1_0.7-0.8	SE195772.002	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	01 Aug 2019
BH7_0.1-0.2	SE195772.008	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH8_0.1-0.2	SE195772.009	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH14_0.1-0.2	SE195772.016	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH15_0.1-0.2	SE195772.017	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH17_0.1-0.2	SE195772.019	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH19_0.1-0.2	SE195772.021	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH20_0.1-0.2	SE195772.022	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH21_0.1-0.2	SE195772.023	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH21_0.6-0.7	SE195772.024	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH22_0.1-0.2	SE195772.025	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH23_0.1-0.2	SE195772.026	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH24_0.1-0.2	SE195772.027	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019

HOLDING TIME SUMMARY

SE195772 R0

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH27_0.1-0.2	SE195772.030	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH29_0.4-0.5	SE195772.032	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH30_0.1-0.2	SE195772.033	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH45_0.1-0.2	SE195772.048	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH45_0.3-0.4	SE195772.049	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH47_0.1-0.2	SE195772.051	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH50_0.1-0.2	SE195772.054	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH57_0.1-0.2	SE195772.061	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH58_0.1-0.2	SE195772.062	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH58_0.4-0.5	SE195772.063	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH59_0.1-0.2	SE195772.064	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH62_0.1-0.2	SE195772.067	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH72_0.5-0.6	SE195772.078	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH82_0.4-0.5	SE195772.089	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH90_0.1-0.2	SE195772.097	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH91_0.1-0.2	SE195772.098	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH101_0.7-0.8	SE195772.111	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH103_0.1-0.2	SE195772.113	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH107_0.1-0.2	SE195772.119	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH108_0.6-0.7	SE195772.121	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH110_0.1-0.2	SE195772.123	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH110_0.6-0.7	SE195772.124	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
QD1	SE195772.125	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
QD2	SE195772.126	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C1	SE195772.129	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C2	SE195772.130	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C3	SE195772.131	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C4	SE195772.132	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C5	SE195772.133	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C6	SE195772.134	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C7	SE195772.135	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C8	SE195772.136	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C9	SE195772.137	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C10	SE195772.138	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C11	SE195772.139	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C12	SE195772.140	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C13	SE195772.141	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C14	SE195772.142	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C15	SE195772.143	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C16	SE195772.144	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C17	SE195772.145	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C18	SE195772.146	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C19	SE195772.147	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C20	SE195772.148	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C21	SE195772.149	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C22	SE195772.150	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C23	SE195772.151	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C24	SE195772.152	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C25	SE195772.153	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C26	SE195772.154	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C27	SE195772.155	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C28	SE195772.156	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C29	SE195772.157	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019

PCBs in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.1-0.2	SE195772.001	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH1_0.7-0.8	SE195772.002	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH7_0.1-0.2	SE195772.008	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH8_0.1-0.2	SE195772.009	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019

HOLDING TIME SUMMARY

SE195772 R0

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

PCBs in Soil (continued) — **Method: ME-(AU)-[ENV]AN420**

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH14_0.1-0.2	SE195772.016	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH15_0.1-0.2	SE195772.017	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH17_0.1-0.2	SE195772.019	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH19_0.1-0.2	SE195772.021	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH20_0.1-0.2	SE195772.022	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH21_0.1-0.2	SE195772.023	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH21_0.6-0.7	SE195772.024	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH22_0.1-0.2	SE195772.025	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH23_0.1-0.2	SE195772.026	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH24_0.1-0.2	SE195772.027	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH27_0.1-0.2	SE195772.030	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH29_0.4-0.5	SE195772.032	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH30_0.1-0.2	SE195772.033	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH45_0.1-0.2	SE195772.048	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH45_0.3-0.4	SE195772.049	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH47_0.1-0.2	SE195772.051	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH50_0.1-0.2	SE195772.054	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH57_0.1-0.2	SE195772.061	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH58_0.1-0.2	SE195772.062	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH58_0.4-0.5	SE195772.063	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH59_0.1-0.2	SE195772.064	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH62_0.1-0.2	SE195772.067	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH72_0.5-0.6	SE195772.078	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH82_0.4-0.5	SE195772.089	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH90_0.1-0.2	SE195772.097	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH91_0.1-0.2	SE195772.098	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH101_0.7-0.8	SE195772.111	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH103_0.1-0.2	SE195772.113	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH107_0.1-0.2	SE195772.119	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH108_0.6-0.7	SE195772.121	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH110_0.1-0.2	SE195772.123	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
BH110_0.6-0.7	SE195772.124	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
QD1	SE195772.125	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
QD2	SE195772.126	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C1	SE195772.129	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C2	SE195772.130	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C3	SE195772.131	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C4	SE195772.132	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C5	SE195772.133	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C6	SE195772.134	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C7	SE195772.135	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C8	SE195772.136	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C9	SE195772.137	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C10	SE195772.138	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C11	SE195772.139	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C12	SE195772.140	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C13	SE195772.141	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C14	SE195772.142	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C15	SE195772.143	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C16	SE195772.144	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C17	SE195772.145	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C18	SE195772.146	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C19	SE195772.147	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C20	SE195772.148	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C21	SE195772.149	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C22	SE195772.150	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C23	SE195772.151	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C24	SE195772.152	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C25	SE195772.153	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C26	SE195772.154	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019

HOLDING TIME SUMMARY

SE195772 R0

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

PCBs in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
C27	SE195772.155	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C28	SE195772.156	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019
C29	SE195772.157	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	06 Aug 2019

pH in soil (1:5)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10_0.1-0.2	SE195772.011	LB179963	24 Jul 2019	26 Jul 2019	31 Jul 2019	01 Aug 2019†	02 Aug 2019	02 Aug 2019
BH10_1-1.1	SE195772.012	LB179963	24 Jul 2019	26 Jul 2019	31 Jul 2019	01 Aug 2019†	02 Aug 2019	02 Aug 2019
BH95_0.1-0.2	SE195772.102	LB179963	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	02 Aug 2019	02 Aug 2019
BH95_0.5-0.6	SE195772.103	LB179963	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	02 Aug 2019	02 Aug 2019
BH95_3.8-3.9	SE195772.104	LB179963	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	02 Aug 2019	02 Aug 2019
BH105_0.1-0.2	SE195772.115	LB179963	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	02 Aug 2019	02 Aug 2019
BH105_0.4-0.5	SE195772.116	LB179963	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	02 Aug 2019	02 Aug 2019
BH105_4-0-4.1	SE195772.117	LB179963	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	02 Aug 2019	02 Aug 2019

Soluble Anions (1:5) in Soil by Ion Chromatography

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10_0.1-0.2	SE195772.011	LB179969	24 Jul 2019	26 Jul 2019	31 Jul 2019	01 Aug 2019†	29 Aug 2019	06 Aug 2019
BH10_1-1.1	SE195772.012	LB179969	24 Jul 2019	26 Jul 2019	31 Jul 2019	01 Aug 2019†	29 Aug 2019	06 Aug 2019
BH95_0.1-0.2	SE195772.102	LB179969	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	29 Aug 2019	06 Aug 2019
BH95_0.5-0.6	SE195772.103	LB179969	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	29 Aug 2019	06 Aug 2019
BH95_3.8-3.9	SE195772.104	LB179969	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	29 Aug 2019	06 Aug 2019
BH105_0.1-0.2	SE195772.115	LB179969	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	29 Aug 2019	06 Aug 2019
BH105_0.4-0.5	SE195772.116	LB179969	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	29 Aug 2019	06 Aug 2019
BH105_4-0-4.1	SE195772.117	LB179969	25 Jul 2019	26 Jul 2019	01 Aug 2019	01 Aug 2019	29 Aug 2019	06 Aug 2019

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.1-0.2	SE195772.001	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH1_0.7-0.8	SE195772.002	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH7_0.1-0.2	SE195772.008	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH8_0.1-0.2	SE195772.009	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH14_0.1-0.2	SE195772.016	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH15_0.1-0.2	SE195772.017	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH17_0.1-0.2	SE195772.019	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH19_0.1-0.2	SE195772.021	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH20_0.1-0.2	SE195772.022	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH21_0.1-0.2	SE195772.023	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH21_0.6-0.7	SE195772.024	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH22_0.1-0.2	SE195772.025	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH23_0.1-0.2	SE195772.026	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH24_0.1-0.2	SE195772.027	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH27_0.1-0.2	SE195772.030	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH29_0.4-0.5	SE195772.032	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH30_0.1-0.2	SE195772.033	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH45_0.1-0.2	SE195772.048	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH45_0.3-0.4	SE195772.049	LB179694	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH47_0.1-0.2	SE195772.051	LB179695	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH50_0.1-0.2	SE195772.054	LB179695	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH57_0.1-0.2	SE195772.061	LB179695	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH58_0.1-0.2	SE195772.062	LB179695	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH58_0.4-0.5	SE195772.063	LB179695	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH59_0.1-0.2	SE195772.064	LB179695	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
BH62_0.1-0.2	SE195772.067	LB179695	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
BH72_0.5-0.6	SE195772.078	LB179695	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
BH82_0.4-0.5	SE195772.089	LB179695	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
BH90_0.1-0.2	SE195772.097	LB179695	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
BH91_0.1-0.2	SE195772.098	LB179695	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
BH101_0.7-0.8	SE195772.111	LB179695	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
BH103_0.1-0.2	SE195772.113	LB179695	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	02 Aug 2019
BH107_0.1-0.2	SE195772.119	LB179695	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019

HOLDING TIME SUMMARY

SE195772 R0

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH108_0.6-0.7	SE195772.121	LB179695	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
BH110_0.1-0.2	SE195772.123	LB179695	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
BH110_0.6-0.7	SE195772.124	LB179695	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
QD1	SE195772.125	LB179695	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
QD2	SE195772.126	LB179695	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
C1	SE195772.129	LB179696	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
C2	SE195772.130	LB179696	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
C3	SE195772.131	LB179696	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
C4	SE195772.132	LB179696	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
C5	SE195772.133	LB179696	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
C6	SE195772.134	LB179696	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
C7	SE195772.135	LB179696	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
C8	SE195772.136	LB179696	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
C9	SE195772.137	LB179696	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
C10	SE195772.138	LB179696	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
C11	SE195772.139	LB179696	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
C12	SE195772.140	LB179696	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
C13	SE195772.141	LB179696	24 Jul 2019	26 Jul 2019	20 Jan 2020	30 Jul 2019	20 Jan 2020	01 Aug 2019
C14	SE195772.142	LB179696	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
C15	SE195772.143	LB179696	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
C16	SE195772.144	LB179696	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
C17	SE195772.145	LB179696	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
C18	SE195772.146	LB179696	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
C19	SE195772.147	LB179696	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	01 Aug 2019
C20	SE195772.148	LB179697	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	02 Aug 2019
C21	SE195772.149	LB179697	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	02 Aug 2019
C23	SE195772.151	LB179697	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	02 Aug 2019
C24	SE195772.152	LB179697	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	02 Aug 2019
C25	SE195772.153	LB179697	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	02 Aug 2019
C26	SE195772.154	LB179697	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	02 Aug 2019
C27	SE195772.155	LB179697	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	02 Aug 2019
C28	SE195772.156	LB179697	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	02 Aug 2019
C29	SE195772.157	LB179697	25 Jul 2019	26 Jul 2019	21 Jan 2020	30 Jul 2019	21 Jan 2020	02 Aug 2019

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
QR1	SE195772.127	LB179906	25 Jul 2019	26 Jul 2019	21 Jan 2020	01 Aug 2019	21 Jan 2020	02 Aug 2019

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_0.1-0.2	SE195772.001	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH1_0.7-0.8	SE195772.002	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH7_0.1-0.2	SE195772.008	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH8_0.1-0.2	SE195772.009	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH14_0.1-0.2	SE195772.016	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH15_0.1-0.2	SE195772.017	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH17_0.1-0.2	SE195772.019	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH19_0.1-0.2	SE195772.021	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH20_0.1-0.2	SE195772.022	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH21_0.1-0.2	SE195772.023	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH21_0.6-0.7	SE195772.024	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH22_0.1-0.2	SE195772.025	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH23_0.1-0.2	SE195772.026	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH24_0.1-0.2	SE195772.027	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH27_0.1-0.2	SE195772.030	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH29_0.4-0.5	SE195772.032	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH30_0.1-0.2	SE195772.033	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH45_0.1-0.2	SE195772.048	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH45_0.3-0.4	SE195772.049	LB179687	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH47_0.1-0.2	SE195772.051	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019

HOLDING TIME SUMMARY

SE195772 R0

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH50_0.1-0.2	SE195772.054	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH57_0.1-0.2	SE195772.061	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH58_0.1-0.2	SE195772.062	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH58_0.4-0.5	SE195772.063	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH59_0.1-0.2	SE195772.064	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH62_0.1-0.2	SE195772.067	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH72_0.5-0.6	SE195772.078	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH82_0.4-0.5	SE195772.089	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH90_0.1-0.2	SE195772.097	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH91_0.1-0.2	SE195772.098	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH101_0.7-0.8	SE195772.111	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH103_0.1-0.2	SE195772.113	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH107_0.1-0.2	SE195772.119	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH108_0.6-0.7	SE195772.121	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH110_0.1-0.2	SE195772.123	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
BH110_0.6-0.7	SE195772.124	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
QD1	SE195772.125	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
QD2	SE195772.126	LB179688	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C1	SE195772.129	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C2	SE195772.130	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C3	SE195772.131	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C4	SE195772.132	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C5	SE195772.133	LB179688	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C6	SE195772.134	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C7	SE195772.135	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C8	SE195772.136	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C9	SE195772.137	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C10	SE195772.138	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C11	SE195772.139	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C12	SE195772.140	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C13	SE195772.141	LB179689	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C14	SE195772.142	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C15	SE195772.143	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C16	SE195772.144	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C17	SE195772.145	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C18	SE195772.146	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C19	SE195772.147	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C20	SE195772.148	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C21	SE195772.149	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C22	SE195772.150	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C23	SE195772.151	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C24	SE195772.152	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C25	SE195772.153	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C26	SE195772.154	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C27	SE195772.155	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C28	SE195772.156	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019
C29	SE195772.157	LB179689	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	05 Aug 2019

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
QR1	SE195772.127	LB179662	25 Jul 2019	26 Jul 2019	01 Aug 2019	30 Jul 2019	08 Sep 2019	01 Aug 2019

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1_0.1-0.2	SE195772.001	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH1_0.7-0.8	SE195772.002	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH7_0.1-0.2	SE195772.008	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH8_0.1-0.2	SE195772.009	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH14_0.1-0.2	SE195772.016	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH15_0.1-0.2	SE195772.017	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019

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HOLDING TIME SUMMARY

SE195772 R0

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

VOC's in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH17_0.1-0.2	SE195772.019	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH19_0.1-0.2	SE195772.021	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH20_0.1-0.2	SE195772.022	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH21_0.1-0.2	SE195772.023	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH21_0.6-0.7	SE195772.024	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH22_0.1-0.2	SE195772.025	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH23_0.1-0.2	SE195772.026	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH24_0.1-0.2	SE195772.027	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH27_0.1-0.2	SE195772.030	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH29_0.4-0.5	SE195772.032	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH30_0.1-0.2	SE195772.033	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH45_0.1-0.2	SE195772.048	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH45_0.3-0.4	SE195772.049	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH47_0.1-0.2	SE195772.051	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH50_0.1-0.2	SE195772.054	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH57_0.1-0.2	SE195772.061	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH58_0.1-0.2	SE195772.062	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH58_0.4-0.5	SE195772.063	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH59_0.1-0.2	SE195772.064	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH62_0.1-0.2	SE195772.067	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH72_0.5-0.6	SE195772.078	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH82_0.4-0.5	SE195772.089	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH90_0.1-0.2	SE195772.097	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH91_0.1-0.2	SE195772.098	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH101_0.7-0.8	SE195772.111	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH103_0.1-0.2	SE195772.113	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH107_0.1-0.2	SE195772.119	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH108_0.6-0.7	SE195772.121	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH110_0.1-0.2	SE195772.123	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH110_0.6-0.7	SE195772.124	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
QD1	SE195772.125	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
QD2	SE195772.126	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
TRIP BLANK	SE195772.128	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019

VOCs in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE195772.127	LB179804	25 Jul 2019	26 Jul 2019	01 Aug 2019	31 Jul 2019	09 Sep 2019	01 Aug 2019

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_0.1-0.2	SE195772.001	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH1_0.7-0.8	SE195772.002	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH7_0.1-0.2	SE195772.008	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH8_0.1-0.2	SE195772.009	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH14_0.1-0.2	SE195772.016	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH15_0.1-0.2	SE195772.017	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH17_0.1-0.2	SE195772.019	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH19_0.1-0.2	SE195772.021	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH20_0.1-0.2	SE195772.022	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH21_0.1-0.2	SE195772.023	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH21_0.6-0.7	SE195772.024	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH22_0.1-0.2	SE195772.025	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH23_0.1-0.2	SE195772.026	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH24_0.1-0.2	SE195772.027	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH27_0.1-0.2	SE195772.030	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH29_0.4-0.5	SE195772.032	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH30_0.1-0.2	SE195772.033	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH45_0.1-0.2	SE195772.048	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH45_0.3-0.4	SE195772.049	LB179685	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH47_0.1-0.2	SE195772.051	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

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
BH50_0.1-0.2	SE195772.054	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH57_0.1-0.2	SE195772.061	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH58_0.1-0.2	SE195772.062	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH58_0.4-0.5	SE195772.063	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH59_0.1-0.2	SE195772.064	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH62_0.1-0.2	SE195772.067	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH72_0.5-0.6	SE195772.078	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH82_0.4-0.5	SE195772.089	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH90_0.1-0.2	SE195772.097	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH91_0.1-0.2	SE195772.098	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH101_0.7-0.8	SE195772.111	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH103_0.1-0.2	SE195772.113	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH107_0.1-0.2	SE195772.119	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH108_0.6-0.7	SE195772.121	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH110_0.1-0.2	SE195772.123	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
BH110_0.6-0.7	SE195772.124	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
QD1	SE195772.125	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
QD2	SE195772.126	LB179686	25 Jul 2019	26 Jul 2019	08 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019
TRIP BLANK	SE195772.128	LB179686	24 Jul 2019	26 Jul 2019	07 Aug 2019	30 Jul 2019	08 Sep 2019	02 Aug 2019

Volatile Petroleum Hydrocarbons in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE195772.127	LB179804	25 Jul 2019	26 Jul 2019	01 Aug 2019	31 Jul 2019	09 Sep 2019	01 Aug 2019

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_0.1-0.2	SE195772.001	%	60 - 130%	125
	BH7_0.1-0.2	SE195772.008	%	60 - 130%	118
	BH8_0.1-0.2	SE195772.009	%	60 - 130%	111
	BH14_0.1-0.2	SE195772.016	%	60 - 130%	123
	BH15_0.1-0.2	SE195772.017	%	60 - 130%	119
	BH17_0.1-0.2	SE195772.019	%	60 - 130%	124
	BH19_0.1-0.2	SE195772.021	%	60 - 130%	125
	BH20_0.1-0.2	SE195772.022	%	60 - 130%	126
	BH21_0.1-0.2	SE195772.023	%	60 - 130%	126
	BH22_0.1-0.2	SE195772.025	%	60 - 130%	122
	BH23_0.1-0.2	SE195772.026	%	60 - 130%	124
	BH24_0.1-0.2	SE195772.027	%	60 - 130%	126
	BH27_0.1-0.2	SE195772.030	%	60 - 130%	119
	BH30_0.1-0.2	SE195772.033	%	60 - 130%	116
	BH45_0.1-0.2	SE195772.048	%	60 - 130%	119
	BH47_0.1-0.2	SE195772.051	%	60 - 130%	119
	BH50_0.1-0.2	SE195772.054	%	60 - 130%	125
	BH57_0.1-0.2	SE195772.061	%	60 - 130%	125
	BH58_0.1-0.2	SE195772.062	%	60 - 130%	123
	BH59_0.1-0.2	SE195772.064	%	60 - 130%	123
	BH62_0.1-0.2	SE195772.067	%	60 - 130%	122
	BH90_0.1-0.2	SE195772.097	%	60 - 130%	122
	BH91_0.1-0.2	SE195772.098	%	60 - 130%	120
	BH103_0.1-0.2	SE195772.113	%	60 - 130%	125
	BH107_0.1-0.2	SE195772.119	%	60 - 130%	119
	BH110_0.1-0.2	SE195772.123	%	60 - 130%	117
	C1	SE195772.129	%	60 - 130%	115
	C2	SE195772.130	%	60 - 130%	118
	C3	SE195772.131	%	60 - 130%	122
	C4	SE195772.132	%	60 - 130%	124
	C5	SE195772.133	%	60 - 130%	122
	C6	SE195772.134	%	60 - 130%	121
	C7	SE195772.135	%	60 - 130%	125
	C8	SE195772.136	%	60 - 130%	123
	C9	SE195772.137	%	60 - 130%	125
	C10	SE195772.138	%	60 - 130%	123
	C11	SE195772.139	%	60 - 130%	123
	C12	SE195772.140	%	60 - 130%	119
	C13	SE195772.141	%	60 - 130%	116
	C14	SE195772.142	%	60 - 130%	114
	C15	SE195772.143	%	60 - 130%	116
	C16	SE195772.144	%	60 - 130%	115
	C17	SE195772.145	%	60 - 130%	117
	C18	SE195772.146	%	60 - 130%	118
	C19	SE195772.147	%	60 - 130%	118
	C20	SE195772.148	%	60 - 130%	119
	C21	SE195772.149	%	60 - 130%	122
	C23	SE195772.151	%	60 - 130%	113
	C24	SE195772.152	%	60 - 130%	115
	C25	SE195772.153	%	60 - 130%	114
	C26	SE195772.154	%	60 - 130%	119
	C27	SE195772.155	%	60 - 130%	119
	C28	SE195772.156	%	60 - 130%	119
	C29	SE195772.157	%	60 - 130%	120

OP Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1_0.1-0.2	SE195772.001	%	60 - 130%	88
	BH7_0.1-0.2	SE195772.008	%	60 - 130%	88
	BH8_0.1-0.2	SE195772.009	%	60 - 130%	82
	BH14_0.1-0.2	SE195772.016	%	60 - 130%	88

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

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

OP Pesticides in Soil (continued) — **Method: ME-(AU)-[ENV]AN420**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH15_0.1-0.2	SE195772.017	%	60 - 130%	88
	BH17_0.1-0.2	SE195772.019	%	60 - 130%	86
	BH19_0.1-0.2	SE195772.021	%	60 - 130%	86
	BH20_0.1-0.2	SE195772.022	%	60 - 130%	84
	BH21_0.1-0.2	SE195772.023	%	60 - 130%	86
	BH22_0.1-0.2	SE195772.025	%	60 - 130%	86
	BH23_0.1-0.2	SE195772.026	%	60 - 130%	82
	BH24_0.1-0.2	SE195772.027	%	60 - 130%	86
	BH27_0.1-0.2	SE195772.030	%	60 - 130%	90
	BH30_0.1-0.2	SE195772.033	%	60 - 130%	82
	BH45_0.1-0.2	SE195772.048	%	60 - 130%	86
	BH47_0.1-0.2	SE195772.051	%	60 - 130%	90
	BH50_0.1-0.2	SE195772.054	%	60 - 130%	88
	BH57_0.1-0.2	SE195772.061	%	60 - 130%	88
	BH58_0.1-0.2	SE195772.062	%	60 - 130%	88
	BH59_0.1-0.2	SE195772.064	%	60 - 130%	78
	BH62_0.1-0.2	SE195772.067	%	60 - 130%	86
	BH90_0.1-0.2	SE195772.097	%	60 - 130%	84
	BH91_0.1-0.2	SE195772.098	%	60 - 130%	88
	BH103_0.1-0.2	SE195772.113	%	60 - 130%	94
	BH107_0.1-0.2	SE195772.119	%	60 - 130%	92
	BH110_0.1-0.2	SE195772.123	%	60 - 130%	86
	C1	SE195772.129	%	60 - 130%	88
	C2	SE195772.130	%	60 - 130%	86
	C3	SE195772.131	%	60 - 130%	82
	C4	SE195772.132	%	60 - 130%	88
	C5	SE195772.133	%	60 - 130%	88
	C6	SE195772.134	%	60 - 130%	82
	C7	SE195772.135	%	60 - 130%	86
	C8	SE195772.136	%	60 - 130%	84
	C9	SE195772.137	%	60 - 130%	82
	C10	SE195772.138	%	60 - 130%	86
	C11	SE195772.139	%	60 - 130%	84
	C12	SE195772.140	%	60 - 130%	86
	C13	SE195772.141	%	60 - 130%	86
	C14	SE195772.142	%	60 - 130%	82
	C15	SE195772.143	%	60 - 130%	86
	C16	SE195772.144	%	60 - 130%	84
	C17	SE195772.145	%	60 - 130%	86
	C18	SE195772.146	%	60 - 130%	86
	C19	SE195772.147	%	60 - 130%	88
	C20	SE195772.148	%	60 - 130%	78
	C21	SE195772.149	%	60 - 130%	84
	C23	SE195772.151	%	60 - 130%	78
	C24	SE195772.152	%	60 - 130%	84
	C25	SE195772.153	%	60 - 130%	94
	C26	SE195772.154	%	60 - 130%	90
	C27	SE195772.155	%	60 - 130%	86
	C28	SE195772.156	%	60 - 130%	88
	C29	SE195772.157	%	60 - 130%	88
d14-p-terphenyl (Surrogate)	BH1_0.1-0.2	SE195772.001	%	60 - 130%	92
	BH7_0.1-0.2	SE195772.008	%	60 - 130%	94
	BH8_0.1-0.2	SE195772.009	%	60 - 130%	94
	BH14_0.1-0.2	SE195772.016	%	60 - 130%	92
	BH15_0.1-0.2	SE195772.017	%	60 - 130%	96
	BH17_0.1-0.2	SE195772.019	%	60 - 130%	96
	BH19_0.1-0.2	SE195772.021	%	60 - 130%	92
	BH20_0.1-0.2	SE195772.022	%	60 - 130%	88
	BH21_0.1-0.2	SE195772.023	%	60 - 130%	90
	BH22_0.1-0.2	SE195772.025	%	60 - 130%	92
	BH23_0.1-0.2	SE195772.026	%	60 - 130%	92

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.

OP Pesticides in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d14-p-terphenyl (Surrogate)	BH24_0.1-0.2	SE195772.027	%	60 - 130%	88
	BH27_0.1-0.2	SE195772.030	%	60 - 130%	94
	BH30_0.1-0.2	SE195772.033	%	60 - 130%	92
	BH45_0.1-0.2	SE195772.048	%	60 - 130%	84
	BH47_0.1-0.2	SE195772.051	%	60 - 130%	96
	BH50_0.1-0.2	SE195772.054	%	60 - 130%	92
	BH57_0.1-0.2	SE195772.061	%	60 - 130%	94
	BH58_0.1-0.2	SE195772.062	%	60 - 130%	92
	BH59_0.1-0.2	SE195772.064	%	60 - 130%	82
	BH62_0.1-0.2	SE195772.067	%	60 - 130%	90
	BH90_0.1-0.2	SE195772.097	%	60 - 130%	86
	BH91_0.1-0.2	SE195772.098	%	60 - 130%	88
	BH103_0.1-0.2	SE195772.113	%	60 - 130%	94
	BH107_0.1-0.2	SE195772.119	%	60 - 130%	94
	BH110_0.1-0.2	SE195772.123	%	60 - 130%	88
	C1	SE195772.129	%	60 - 130%	90
	C2	SE195772.130	%	60 - 130%	90
	C3	SE195772.131	%	60 - 130%	88
	C4	SE195772.132	%	60 - 130%	92
	C5	SE195772.133	%	60 - 130%	94
	C6	SE195772.134	%	60 - 130%	90
	C7	SE195772.135	%	60 - 130%	92
	C8	SE195772.136	%	60 - 130%	90
	C9	SE195772.137	%	60 - 130%	90
	C10	SE195772.138	%	60 - 130%	92
	C11	SE195772.139	%	60 - 130%	90
	C12	SE195772.140	%	60 - 130%	94
	C13	SE195772.141	%	60 - 130%	92
	C14	SE195772.142	%	60 - 130%	92
	C15	SE195772.143	%	60 - 130%	94
	C16	SE195772.144	%	60 - 130%	92
	C17	SE195772.145	%	60 - 130%	94
	C18	SE195772.146	%	60 - 130%	94
	C19	SE195772.147	%	60 - 130%	94
	C20	SE195772.148	%	60 - 130%	92
	C21	SE195772.149	%	60 - 130%	92
	C23	SE195772.151	%	60 - 130%	92
	C24	SE195772.152	%	60 - 130%	94
	C25	SE195772.153	%	60 - 130%	94
	C26	SE195772.154	%	60 - 130%	90
	C27	SE195772.155	%	60 - 130%	86
	C28	SE195772.156	%	60 - 130%	88
	C29	SE195772.157	%	60 - 130%	88

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1_0.1-0.2	SE195772.001	%	70 - 130%	88
	BH1_0.7-0.8	SE195772.002	%	70 - 130%	86
	BH7_0.1-0.2	SE195772.008	%	70 - 130%	88
	BH8_0.1-0.2	SE195772.009	%	70 - 130%	82
	BH14_0.1-0.2	SE195772.016	%	70 - 130%	88
	BH15_0.1-0.2	SE195772.017	%	70 - 130%	88
	BH17_0.1-0.2	SE195772.019	%	70 - 130%	86
	BH19_0.1-0.2	SE195772.021	%	70 - 130%	86
	BH20_0.1-0.2	SE195772.022	%	70 - 130%	84
	BH21_0.1-0.2	SE195772.023	%	70 - 130%	86
	BH21_0.6-0.7	SE195772.024	%	70 - 130%	86
	BH22_0.1-0.2	SE195772.025	%	70 - 130%	86
	BH23_0.1-0.2	SE195772.026	%	70 - 130%	82
	BH24_0.1-0.2	SE195772.027	%	70 - 130%	86
	BH27_0.1-0.2	SE195772.030	%	70 - 130%	90

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — **Method: ME-(AU)-[ENV]AN420**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH29_0.4-0.5	SE195772.032	%	70 - 130%	88
	BH30_0.1-0.2	SE195772.033	%	70 - 130%	82
	BH45_0.1-0.2	SE195772.048	%	70 - 130%	86
	BH45_0.3-0.4	SE195772.049	%	70 - 130%	90
	BH47_0.1-0.2	SE195772.051	%	70 - 130%	90
	BH50_0.1-0.2	SE195772.054	%	70 - 130%	88
	BH57_0.1-0.2	SE195772.061	%	70 - 130%	88
	BH58_0.1-0.2	SE195772.062	%	70 - 130%	88
	BH58_0.4-0.5	SE195772.063	%	70 - 130%	86
	BH59_0.1-0.2	SE195772.064	%	70 - 130%	78
	BH62_0.1-0.2	SE195772.067	%	70 - 130%	86
	BH72_0.5-0.6	SE195772.078	%	70 - 130%	88
	BH82_0.4-0.5	SE195772.089	%	70 - 130%	84
	BH90_0.1-0.2	SE195772.097	%	70 - 130%	84
	BH91_0.1-0.2	SE195772.098	%	70 - 130%	88
	BH101_0.7-0.8	SE195772.111	%	70 - 130%	86
	BH103_0.1-0.2	SE195772.113	%	70 - 130%	94
	BH107_0.1-0.2	SE195772.119	%	70 - 130%	92
	BH108_0.6-0.7	SE195772.121	%	70 - 130%	88
	BH110_0.1-0.2	SE195772.123	%	70 - 130%	86
	BH110_0.6-0.7	SE195772.124	%	70 - 130%	84
d14-p-terphenyl (Surrogate)	BH1_0.1-0.2	SE195772.001	%	70 - 130%	92
	BH1_0.7-0.8	SE195772.002	%	70 - 130%	92
	BH7_0.1-0.2	SE195772.008	%	70 - 130%	94
	BH8_0.1-0.2	SE195772.009	%	70 - 130%	94
	BH14_0.1-0.2	SE195772.016	%	70 - 130%	92
	BH15_0.1-0.2	SE195772.017	%	70 - 130%	96
	BH17_0.1-0.2	SE195772.019	%	70 - 130%	96
	BH19_0.1-0.2	SE195772.021	%	70 - 130%	92
	BH20_0.1-0.2	SE195772.022	%	70 - 130%	88
	BH21_0.1-0.2	SE195772.023	%	70 - 130%	90
	BH21_0.6-0.7	SE195772.024	%	70 - 130%	86
	BH22_0.1-0.2	SE195772.025	%	70 - 130%	92
	BH23_0.1-0.2	SE195772.026	%	70 - 130%	92
	BH24_0.1-0.2	SE195772.027	%	70 - 130%	88
	BH27_0.1-0.2	SE195772.030	%	70 - 130%	94
	BH29_0.4-0.5	SE195772.032	%	70 - 130%	88
	BH30_0.1-0.2	SE195772.033	%	70 - 130%	92
	BH45_0.1-0.2	SE195772.048	%	70 - 130%	84
	BH45_0.3-0.4	SE195772.049	%	70 - 130%	84
	BH47_0.1-0.2	SE195772.051	%	70 - 130%	96
	BH50_0.1-0.2	SE195772.054	%	70 - 130%	92
	BH57_0.1-0.2	SE195772.061	%	70 - 130%	94
	BH58_0.1-0.2	SE195772.062	%	70 - 130%	92
	BH58_0.4-0.5	SE195772.063	%	70 - 130%	90
	BH59_0.1-0.2	SE195772.064	%	70 - 130%	82
	BH62_0.1-0.2	SE195772.067	%	70 - 130%	90
	BH72_0.5-0.6	SE195772.078	%	70 - 130%	94
	BH82_0.4-0.5	SE195772.089	%	70 - 130%	90
	BH90_0.1-0.2	SE195772.097	%	70 - 130%	86
	BH91_0.1-0.2	SE195772.098	%	70 - 130%	88
	BH101_0.7-0.8	SE195772.111	%	70 - 130%	88
	BH103_0.1-0.2	SE195772.113	%	70 - 130%	94
	BH107_0.1-0.2	SE195772.119	%	70 - 130%	94
	BH108_0.6-0.7	SE195772.121	%	70 - 130%	92
	BH110_0.1-0.2	SE195772.123	%	70 - 130%	88
	BH110_0.6-0.7	SE195772.124	%	70 - 130%	90
d5-nitrobenzene (Surrogate)	BH1_0.1-0.2	SE195772.001	%	70 - 130%	86
	BH1_0.7-0.8	SE195772.002	%	70 - 130%	88
	BH7_0.1-0.2	SE195772.008	%	70 - 130%	88
	BH8_0.1-0.2	SE195772.009	%	70 - 130%	82

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d5-nitrobenzene (Surrogate)	BH14_0.1-0.2	SE195772.016	%	70 - 130%	88
	BH15_0.1-0.2	SE195772.017	%	70 - 130%	86
	BH17_0.1-0.2	SE195772.019	%	70 - 130%	86
	BH19_0.1-0.2	SE195772.021	%	70 - 130%	82
	BH20_0.1-0.2	SE195772.022	%	70 - 130%	82
	BH21_0.1-0.2	SE195772.023	%	70 - 130%	88
	BH21_0.6-0.7	SE195772.024	%	70 - 130%	82
	BH22_0.1-0.2	SE195772.025	%	70 - 130%	86
	BH23_0.1-0.2	SE195772.026	%	70 - 130%	84
	BH24_0.1-0.2	SE195772.027	%	70 - 130%	82
	BH27_0.1-0.2	SE195772.030	%	70 - 130%	84
	BH29_0.4-0.5	SE195772.032	%	70 - 130%	84
	BH30_0.1-0.2	SE195772.033	%	70 - 130%	86
	BH45_0.1-0.2	SE195772.048	%	70 - 130%	84
	BH45_0.3-0.4	SE195772.049	%	70 - 130%	78
	BH47_0.1-0.2	SE195772.051	%	70 - 130%	90
	BH50_0.1-0.2	SE195772.054	%	70 - 130%	88
	BH57_0.1-0.2	SE195772.061	%	70 - 130%	88
	BH58_0.1-0.2	SE195772.062	%	70 - 130%	90
	BH58_0.4-0.5	SE195772.063	%	70 - 130%	88
	BH59_0.1-0.2	SE195772.064	%	70 - 130%	78
	BH62_0.1-0.2	SE195772.067	%	70 - 130%	82
	BH72_0.5-0.6	SE195772.078	%	70 - 130%	88
	BH82_0.4-0.5	SE195772.089	%	70 - 130%	82
	BH90_0.1-0.2	SE195772.097	%	70 - 130%	84
	BH91_0.1-0.2	SE195772.098	%	70 - 130%	88
	BH101_0.7-0.8	SE195772.111	%	70 - 130%	86
	BH103_0.1-0.2	SE195772.113	%	70 - 130%	90
	BH107_0.1-0.2	SE195772.119	%	70 - 130%	88
	BH108_0.6-0.7	SE195772.121	%	70 - 130%	90
	BH110_0.1-0.2	SE195772.123	%	70 - 130%	82
	BH110_0.6-0.7	SE195772.124	%	70 - 130%	82

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH1_0.1-0.2	SE195772.001	%	60 - 130%	125
	BH7_0.1-0.2	SE195772.008	%	60 - 130%	118
	BH8_0.1-0.2	SE195772.009	%	60 - 130%	111
	BH14_0.1-0.2	SE195772.016	%	60 - 130%	123
	BH15_0.1-0.2	SE195772.017	%	60 - 130%	119
	BH17_0.1-0.2	SE195772.019	%	60 - 130%	124
	BH19_0.1-0.2	SE195772.021	%	60 - 130%	125
	BH20_0.1-0.2	SE195772.022	%	60 - 130%	126
	BH21_0.1-0.2	SE195772.023	%	60 - 130%	126
	BH22_0.1-0.2	SE195772.025	%	60 - 130%	122
	BH23_0.1-0.2	SE195772.026	%	60 - 130%	124
	BH24_0.1-0.2	SE195772.027	%	60 - 130%	126
	BH27_0.1-0.2	SE195772.030	%	60 - 130%	119
	BH30_0.1-0.2	SE195772.033	%	60 - 130%	116
	BH45_0.1-0.2	SE195772.048	%	60 - 130%	119
	BH47_0.1-0.2	SE195772.051	%	60 - 130%	119
	BH50_0.1-0.2	SE195772.054	%	60 - 130%	125
	BH57_0.1-0.2	SE195772.061	%	60 - 130%	125
	BH58_0.1-0.2	SE195772.062	%	60 - 130%	123
	BH59_0.1-0.2	SE195772.064	%	60 - 130%	123
	BH62_0.1-0.2	SE195772.067	%	60 - 130%	122
	BH90_0.1-0.2	SE195772.097	%	60 - 130%	122
	BH91_0.1-0.2	SE195772.098	%	60 - 130%	120
	BH103_0.1-0.2	SE195772.113	%	60 - 130%	125
	BH107_0.1-0.2	SE195772.119	%	60 - 130%	119
	BH110_0.1-0.2	SE195772.123	%	60 - 130%	117

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.

PCBs in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	C1	SE195772.129	%	60 - 130%	115
	C2	SE195772.130	%	60 - 130%	118
	C3	SE195772.131	%	60 - 130%	122
	C4	SE195772.132	%	60 - 130%	124
	C5	SE195772.133	%	60 - 130%	122

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1_0.1-0.2	SE195772.001	%	60 - 130%	87
	BH1_0.7-0.8	SE195772.002	%	60 - 130%	94
	BH7_0.1-0.2	SE195772.008	%	60 - 130%	87
	BH8_0.1-0.2	SE195772.009	%	60 - 130%	105
	BH14_0.1-0.2	SE195772.016	%	60 - 130%	93
	BH15_0.1-0.2	SE195772.017	%	60 - 130%	101
	BH17_0.1-0.2	SE195772.019	%	60 - 130%	88
	BH19_0.1-0.2	SE195772.021	%	60 - 130%	89
	BH20_0.1-0.2	SE195772.022	%	60 - 130%	88
	BH21_0.1-0.2	SE195772.023	%	60 - 130%	83
	BH21_0.6-0.7	SE195772.024	%	60 - 130%	96
	BH22_0.1-0.2	SE195772.025	%	60 - 130%	84
	BH23_0.1-0.2	SE195772.026	%	60 - 130%	87
	BH24_0.1-0.2	SE195772.027	%	60 - 130%	86
	BH27_0.1-0.2	SE195772.030	%	60 - 130%	85
	BH29_0.4-0.5	SE195772.032	%	60 - 130%	89
	BH30_0.1-0.2	SE195772.033	%	60 - 130%	87
	BH45_0.1-0.2	SE195772.048	%	60 - 130%	85
	BH45_0.3-0.4	SE195772.049	%	60 - 130%	88
	BH47_0.1-0.2	SE195772.051	%	60 - 130%	85
	BH50_0.1-0.2	SE195772.054	%	60 - 130%	87
	BH57_0.1-0.2	SE195772.061	%	60 - 130%	87
	BH58_0.1-0.2	SE195772.062	%	60 - 130%	95
	BH58_0.4-0.5	SE195772.063	%	60 - 130%	104
	BH59_0.1-0.2	SE195772.064	%	60 - 130%	87
	BH62_0.1-0.2	SE195772.067	%	60 - 130%	91
	BH72_0.5-0.6	SE195772.078	%	60 - 130%	98
	BH82_0.4-0.5	SE195772.089	%	60 - 130%	98
	BH90_0.1-0.2	SE195772.097	%	60 - 130%	84
	BH91_0.1-0.2	SE195772.098	%	60 - 130%	86
	BH101_0.7-0.8	SE195772.111	%	60 - 130%	87
	BH103_0.1-0.2	SE195772.113	%	60 - 130%	94
	BH107_0.1-0.2	SE195772.119	%	60 - 130%	85
	BH108_0.6-0.7	SE195772.121	%	60 - 130%	92
	BH110_0.1-0.2	SE195772.123	%	60 - 130%	95
	BH110_0.6-0.7	SE195772.124	%	60 - 130%	93
	QD1	SE195772.125	%	60 - 130%	88
	QD2	SE195772.126	%	60 - 130%	84
	TRIP BLANK	SE195772.128	%	60 - 130%	97
d4-1,2-dichloroethane (Surrogate)	BH1_0.1-0.2	SE195772.001	%	60 - 130%	105
	BH1_0.7-0.8	SE195772.002	%	60 - 130%	98
	BH7_0.1-0.2	SE195772.008	%	60 - 130%	89
	BH8_0.1-0.2	SE195772.009	%	60 - 130%	112
	BH14_0.1-0.2	SE195772.016	%	60 - 130%	97
	BH15_0.1-0.2	SE195772.017	%	60 - 130%	105
	BH17_0.1-0.2	SE195772.019	%	60 - 130%	90
	BH19_0.1-0.2	SE195772.021	%	60 - 130%	95
	BH20_0.1-0.2	SE195772.022	%	60 - 130%	92
	BH21_0.1-0.2	SE195772.023	%	60 - 130%	84
	BH21_0.6-0.7	SE195772.024	%	60 - 130%	119
	BH22_0.1-0.2	SE195772.025	%	60 - 130%	107
	BH23_0.1-0.2	SE195772.026	%	60 - 130%	108
	BH24_0.1-0.2	SE195772.027	%	60 - 130%	108

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)	BH27_0.1-0.2	SE195772.030	%	60 - 130%	106
	BH29_0.4-0.5	SE195772.032	%	60 - 130%	112
	BH30_0.1-0.2	SE195772.033	%	60 - 130%	109
	BH45_0.1-0.2	SE195772.048	%	60 - 130%	107
	BH45_0.3-0.4	SE195772.049	%	60 - 130%	108
	BH47_0.1-0.2	SE195772.051	%	60 - 130%	97
	BH50_0.1-0.2	SE195772.054	%	60 - 130%	89
	BH57_0.1-0.2	SE195772.061	%	60 - 130%	87
	BH58_0.1-0.2	SE195772.062	%	60 - 130%	95
	BH58_0.4-0.5	SE195772.063	%	60 - 130%	104
	BH59_0.1-0.2	SE195772.064	%	60 - 130%	90
	BH62_0.1-0.2	SE195772.067	%	60 - 130%	94
	BH72_0.5-0.6	SE195772.078	%	60 - 130%	97
	BH82_0.4-0.5	SE195772.089	%	60 - 130%	104
	BH90_0.1-0.2	SE195772.097	%	60 - 130%	79
	BH91_0.1-0.2	SE195772.098	%	60 - 130%	88
	BH101_0.7-0.8	SE195772.111	%	60 - 130%	90
	BH103_0.1-0.2	SE195772.113	%	60 - 130%	96
	BH107_0.1-0.2	SE195772.119	%	60 - 130%	87
	BH108_0.6-0.7	SE195772.121	%	60 - 130%	94
	BH110_0.1-0.2	SE195772.123	%	60 - 130%	98
	BH110_0.6-0.7	SE195772.124	%	60 - 130%	92
	QD1	SE195772.125	%	60 - 130%	91
	QD2	SE195772.126	%	60 - 130%	86
	TRIP BLANK	SE195772.128	%	60 - 130%	103
d8-toluene (Surrogate)	BH1_0.1-0.2	SE195772.001	%	60 - 130%	85
	BH1_0.7-0.8	SE195772.002	%	60 - 130%	98
	BH7_0.1-0.2	SE195772.008	%	60 - 130%	93
	BH8_0.1-0.2	SE195772.009	%	60 - 130%	117
	BH14_0.1-0.2	SE195772.016	%	60 - 130%	98
	BH15_0.1-0.2	SE195772.017	%	60 - 130%	107
	BH17_0.1-0.2	SE195772.019	%	60 - 130%	96
	BH19_0.1-0.2	SE195772.021	%	60 - 130%	99
	BH20_0.1-0.2	SE195772.022	%	60 - 130%	92
	BH21_0.1-0.2	SE195772.023	%	60 - 130%	90
	BH21_0.6-0.7	SE195772.024	%	60 - 130%	91
	BH22_0.1-0.2	SE195772.025	%	60 - 130%	81
	BH23_0.1-0.2	SE195772.026	%	60 - 130%	82
	BH24_0.1-0.2	SE195772.027	%	60 - 130%	81
	BH27_0.1-0.2	SE195772.030	%	60 - 130%	80
	BH29_0.4-0.5	SE195772.032	%	60 - 130%	85
	BH30_0.1-0.2	SE195772.033	%	60 - 130%	83
	BH45_0.1-0.2	SE195772.048	%	60 - 130%	79
	BH45_0.3-0.4	SE195772.049	%	60 - 130%	82
	BH47_0.1-0.2	SE195772.051	%	60 - 130%	82
	BH50_0.1-0.2	SE195772.054	%	60 - 130%	93
	BH57_0.1-0.2	SE195772.061	%	60 - 130%	93
	BH58_0.1-0.2	SE195772.062	%	60 - 130%	95
	BH58_0.4-0.5	SE195772.063	%	60 - 130%	109
	BH59_0.1-0.2	SE195772.064	%	60 - 130%	91
	BH62_0.1-0.2	SE195772.067	%	60 - 130%	99
	BH72_0.5-0.6	SE195772.078	%	60 - 130%	100
	BH82_0.4-0.5	SE195772.089	%	60 - 130%	95
	BH90_0.1-0.2	SE195772.097	%	60 - 130%	103
	BH91_0.1-0.2	SE195772.098	%	60 - 130%	90
	BH101_0.7-0.8	SE195772.111	%	60 - 130%	94
	BH103_0.1-0.2	SE195772.113	%	60 - 130%	97
	BH107_0.1-0.2	SE195772.119	%	60 - 130%	92
	BH108_0.6-0.7	SE195772.121	%	60 - 130%	99
	BH110_0.1-0.2	SE195772.123	%	60 - 130%	94
	BH110_0.6-0.7	SE195772.124	%	60 - 130%	96

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

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

VOC's in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	QD1	SE195772.125	%	60 - 130%	96
	QD2	SE195772.126	%	60 - 130%	92
	TRIP BLANK	SE195772.128	%	60 - 130%	103

VOCs in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QR1	SE195772.127	%	40 - 130%	93
d4-1,2-dichloroethane (Surrogate)	QR1	SE195772.127	%	40 - 130%	91
d8-toluene (Surrogate)	QR1	SE195772.127	%	40 - 130%	104

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1_0.1-0.2	SE195772.001	%	60 - 130%	87
	BH1_0.7-0.8	SE195772.002	%	60 - 130%	94
	BH7_0.1-0.2	SE195772.008	%	60 - 130%	87
	BH8_0.1-0.2	SE195772.009	%	60 - 130%	105
	BH14_0.1-0.2	SE195772.016	%	60 - 130%	93
	BH15_0.1-0.2	SE195772.017	%	60 - 130%	101
	BH17_0.1-0.2	SE195772.019	%	60 - 130%	88
	BH19_0.1-0.2	SE195772.021	%	60 - 130%	89
	BH20_0.1-0.2	SE195772.022	%	60 - 130%	88
	BH21_0.1-0.2	SE195772.023	%	60 - 130%	83
	BH21_0.6-0.7	SE195772.024	%	60 - 130%	96
	BH22_0.1-0.2	SE195772.025	%	60 - 130%	84
	BH23_0.1-0.2	SE195772.026	%	60 - 130%	87
	BH24_0.1-0.2	SE195772.027	%	60 - 130%	86
	BH27_0.1-0.2	SE195772.030	%	60 - 130%	85
	BH29_0.4-0.5	SE195772.032	%	60 - 130%	89
	BH30_0.1-0.2	SE195772.033	%	60 - 130%	87
	BH45_0.1-0.2	SE195772.048	%	60 - 130%	85
	BH45_0.3-0.4	SE195772.049	%	60 - 130%	88
	BH47_0.1-0.2	SE195772.051	%	60 - 130%	85
	BH50_0.1-0.2	SE195772.054	%	60 - 130%	87
	BH57_0.1-0.2	SE195772.061	%	60 - 130%	87
	BH58_0.1-0.2	SE195772.062	%	60 - 130%	95
	BH58_0.4-0.5	SE195772.063	%	60 - 130%	104
	BH59_0.1-0.2	SE195772.064	%	60 - 130%	87
	BH62_0.1-0.2	SE195772.067	%	60 - 130%	91
	BH72_0.5-0.6	SE195772.078	%	60 - 130%	98
	BH82_0.4-0.5	SE195772.089	%	60 - 130%	98
	BH90_0.1-0.2	SE195772.097	%	60 - 130%	84
	BH91_0.1-0.2	SE195772.098	%	60 - 130%	86
	BH101_0.7-0.8	SE195772.111	%	60 - 130%	87
	BH103_0.1-0.2	SE195772.113	%	60 - 130%	94
	BH107_0.1-0.2	SE195772.119	%	60 - 130%	85
	BH108_0.6-0.7	SE195772.121	%	60 - 130%	92
	BH110_0.1-0.2	SE195772.123	%	60 - 130%	95
	BH110_0.6-0.7	SE195772.124	%	60 - 130%	93
	QD1	SE195772.125	%	60 - 130%	88
	QD2	SE195772.126	%	60 - 130%	84
	TRIP BLANK	SE195772.128	%	60 - 130%	97
d4-1,2-dichloroethane (Surrogate)	BH1_0.1-0.2	SE195772.001	%	60 - 130%	105
	BH1_0.7-0.8	SE195772.002	%	60 - 130%	98
	BH7_0.1-0.2	SE195772.008	%	60 - 130%	89
	BH8_0.1-0.2	SE195772.009	%	60 - 130%	112
	BH14_0.1-0.2	SE195772.016	%	60 - 130%	97
	BH15_0.1-0.2	SE195772.017	%	60 - 130%	105
	BH17_0.1-0.2	SE195772.019	%	60 - 130%	90
	BH19_0.1-0.2	SE195772.021	%	60 - 130%	95
	BH20_0.1-0.2	SE195772.022	%	60 - 130%	92
	BH21_0.1-0.2	SE195772.023	%	60 - 130%	84
	BH21_0.6-0.7	SE195772.024	%	60 - 130%	119

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)	BH22_0.1-0.2	SE195772.025	%	60 - 130%	107
	BH23_0.1-0.2	SE195772.026	%	60 - 130%	108
	BH24_0.1-0.2	SE195772.027	%	60 - 130%	108
	BH27_0.1-0.2	SE195772.030	%	60 - 130%	106
	BH29_0.4-0.5	SE195772.032	%	60 - 130%	112
	BH30_0.1-0.2	SE195772.033	%	60 - 130%	109
	BH45_0.1-0.2	SE195772.048	%	60 - 130%	107
	BH45_0.3-0.4	SE195772.049	%	60 - 130%	108
	BH47_0.1-0.2	SE195772.051	%	60 - 130%	97
	BH50_0.1-0.2	SE195772.054	%	60 - 130%	89
	BH57_0.1-0.2	SE195772.061	%	60 - 130%	87
	BH58_0.1-0.2	SE195772.062	%	60 - 130%	95
	BH58_0.4-0.5	SE195772.063	%	60 - 130%	104
	BH59_0.1-0.2	SE195772.064	%	60 - 130%	90
	BH62_0.1-0.2	SE195772.067	%	60 - 130%	94
	BH72_0.5-0.6	SE195772.078	%	60 - 130%	97
	BH82_0.4-0.5	SE195772.089	%	60 - 130%	104
	BH90_0.1-0.2	SE195772.097	%	60 - 130%	79
	BH91_0.1-0.2	SE195772.098	%	60 - 130%	88
	BH101_0.7-0.8	SE195772.111	%	60 - 130%	90
	BH103_0.1-0.2	SE195772.113	%	60 - 130%	96
	BH107_0.1-0.2	SE195772.119	%	60 - 130%	87
	BH108_0.6-0.7	SE195772.121	%	60 - 130%	94
	BH110_0.1-0.2	SE195772.123	%	60 - 130%	98
	BH110_0.6-0.7	SE195772.124	%	60 - 130%	92
	QD1	SE195772.125	%	60 - 130%	91
	QD2	SE195772.126	%	60 - 130%	86
	TRIP BLANK	SE195772.128	%	60 - 130%	103
d8-toluene (Surrogate)	BH1_0.1-0.2	SE195772.001	%	60 - 130%	85
	BH1_0.7-0.8	SE195772.002	%	60 - 130%	98
	BH7_0.1-0.2	SE195772.008	%	60 - 130%	93
	BH8_0.1-0.2	SE195772.009	%	60 - 130%	117
	BH14_0.1-0.2	SE195772.016	%	60 - 130%	98
	BH15_0.1-0.2	SE195772.017	%	60 - 130%	107
	BH17_0.1-0.2	SE195772.019	%	60 - 130%	96
	BH19_0.1-0.2	SE195772.021	%	60 - 130%	99
	BH20_0.1-0.2	SE195772.022	%	60 - 130%	92
	BH21_0.1-0.2	SE195772.023	%	60 - 130%	90
	BH21_0.6-0.7	SE195772.024	%	60 - 130%	91
	BH22_0.1-0.2	SE195772.025	%	60 - 130%	81
	BH23_0.1-0.2	SE195772.026	%	60 - 130%	82
	BH24_0.1-0.2	SE195772.027	%	60 - 130%	81
	BH27_0.1-0.2	SE195772.030	%	60 - 130%	80
	BH29_0.4-0.5	SE195772.032	%	60 - 130%	85
	BH30_0.1-0.2	SE195772.033	%	60 - 130%	83
	BH45_0.1-0.2	SE195772.048	%	60 - 130%	79
	BH45_0.3-0.4	SE195772.049	%	60 - 130%	82
	BH47_0.1-0.2	SE195772.051	%	60 - 130%	82
	BH50_0.1-0.2	SE195772.054	%	60 - 130%	93
	BH57_0.1-0.2	SE195772.061	%	60 - 130%	93
	BH58_0.1-0.2	SE195772.062	%	60 - 130%	95
	BH58_0.4-0.5	SE195772.063	%	60 - 130%	109
	BH59_0.1-0.2	SE195772.064	%	60 - 130%	91
	BH62_0.1-0.2	SE195772.067	%	60 - 130%	99
	BH72_0.5-0.6	SE195772.078	%	60 - 130%	100
	BH82_0.4-0.5	SE195772.089	%	60 - 130%	95
	BH90_0.1-0.2	SE195772.097	%	60 - 130%	103
	BH91_0.1-0.2	SE195772.098	%	60 - 130%	90
	BH101_0.7-0.8	SE195772.111	%	60 - 130%	94
	BH103_0.1-0.2	SE195772.113	%	60 - 130%	97
	BH107_0.1-0.2	SE195772.119	%	60 - 130%	92

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

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

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	BH108_0.6-0.7	SE195772.121	%	60 - 130%	99
	BH110_0.1-0.2	SE195772.123	%	60 - 130%	94
	BH110_0.6-0.7	SE195772.124	%	60 - 130%	96
	QD1	SE195772.125	%	60 - 130%	96
	QD2	SE195772.126	%	60 - 130%	92
	TRIP BLANK	SE195772.128	%	60 - 130%	103

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QR1	SE195772.127	%	40 - 130%	93
d4-1,2-dichloroethane (Surrogate)	QR1	SE195772.127	%	60 - 130%	91
d8-toluene (Surrogate)	QR1	SE195772.127	%	40 - 130%	104

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

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

Conductivity and TDS by Calculation - Soil

Method: ME-(AU)-[ENV]AN106

Sample Number	Parameter	Units	LOR	Result
LB179963.001	Conductivity of Extract (1:5 as received)	µS/cm	1	<1
	Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	0

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result
LB179777.001	Exchangeable Sodium, Na	mg/kg	2	0
	Exchangeable Potassium, K	mg/kg	2	0
	Exchangeable Calcium, Ca	mg/kg	2	0
	Exchangeable Magnesium, Mg	mg/kg	2	0

Mercury (dissolved) in Water

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

Sample Number	Parameter	Units	LOR	Result
LB179654.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB179698.001	Mercury	mg/kg	0.05	<0.05
LB179699.001	Mercury	mg/kg	0.05	<0.05
LB179700.001	Mercury	mg/kg	0.05	<0.05
LB179701.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB179687.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	124
LB179688.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2

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

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

OC Pesticides in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB179688.001		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	124
LB179689.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	117

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB179687.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	92
		d14-p-terphenyl (Surrogate)	%	-	96
LB179688.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2

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

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

OP Pesticides in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB179688.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	90
		d14-p-terphenyl (Surrogate)	%	-	96
LB179689.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	84
		d14-p-terphenyl (Surrogate)	%	-	92

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB179687.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	90
		2-fluorobiphenyl (Surrogate)	%	-	92
		d14-p-terphenyl (Surrogate)	%	-	96
LB179688.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	92
		2-fluorobiphenyl (Surrogate)	%	-	90
		d14-p-terphenyl (Surrogate)	%	-	96

PCBs in Soil

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

Sample Number	Parameter	Units	LOR

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

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

PCBs in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB179687.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	124
LB179688.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	124

Soluble Anions (1:5) in Soil by Ion Chromatography — Method: ME-(AU)-[ENV]AN245

Sample Number	Parameter	Units	LOR	Result
LB179969.001	Chloride	mg/kg	0.25	<0.25
	Sulfate	mg/kg	5	<5.0

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB179694.001	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
LB179695.001	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
LB179696.001	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
LB179697.001	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

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

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

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

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

Sample Number	Parameter	Units	LOR	Result
LB179906.001	Arsenic, As	µg/L	1	<1
	Cadmium, Cd	µg/L	0.1	<0.1
	Chromium, Cr	µg/L	1	<1
	Copper, Cu	µg/L	1	<1
	Lead, Pb	µg/L	1	<1
	Nickel, Ni	µg/L	1	<1
	Zinc, Zn	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB179687.001	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
LB179688.001	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
LB179662.001	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
LB179685.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	99
		d8-toluene (Surrogate)	%	-	81
		Bromofluorobenzene (Surrogate)	%	-	82
	Totals	Total BTEX	mg/kg	0.6	<0.6
LB179686.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	109
		d8-toluene (Surrogate)	%	-	90
		Bromofluorobenzene (Surrogate)	%	-	91
	Totals	Total BTEX	mg/kg	0.6	<0.6

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result
LB179804.001	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	µg/L	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	106
		d8-toluene (Surrogate)	%	-	111
		Bromofluorobenzene (Surrogate)	%	-	105

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

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB179685.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	99
		d8-toluene (Surrogate)	%	-	81
LB179686.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	109
		d8-toluene (Surrogate)	%	-	90

Volatile Petroleum Hydrocarbons in Water

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

Sample Number		Parameter	Units	LOR	Result
LB179804.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	106
		d8-toluene (Surrogate)	%	-	111
		Bromofluorobenzene (Surrogate)	%	-	105

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.

Conductivity and TDS by Calculation - Soil

Method: ME-(AU)-[ENV]AN106

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195755.005	LB179963.019	Conductivity of Extract (1:5 as received)	µS/cm	1	250	246.3	31	1
		Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	300	97.570612244	31	1
SE195772.117	LB179963.018	Conductivity of Extract (1:5 as received)	µS/cm	1	79	66	33	18
		Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	94	78.7606382978	32	18

Mercury (dissolved) in Water

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195780.001	LB179654.011	Mercury	µg/L	0.0001	<0.00005	-0.0226	200	0

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.023	LB179698.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE195772.049	LB179698.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE195772.097	LB179699.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE195772.126	LB179699.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE195772.138	LB179700.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE195772.147	LB179700.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE195772.157	LB179701.013	Mercury	mg/kg	0.05	<0.05	<0.05	183	0

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.021	LB179690.011	% Moisture	%w/w	0.5	10.4	10.5	40	1
SE195772.049	LB179690.024	% Moisture	%w/w	0.5	17.8	18.3	36	3
SE195772.119	LB179692.022	% Moisture	%w/w	0.5	14.3	13.3	37	7
SE195772.133	LB179692.035	% Moisture	%w/w	0.5	15.0	14.1	37	6
SE195772.143	LB179693.011	% Moisture	%w/w	0.5	15.9	16.4	36	3
SE195772.157	LB179693.027	% Moisture	%w/w	0.5	10.6	9.7	40	9

OC Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.023	LB179687.014		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.19	0.19	30	0
SE195772.097	LB179688.014		Hexachlorobenzene (HCB)	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.

OC Pesticides in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.097	LB179688.014		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.18	0.18	30	2
SE195772.133	LB179688.033		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.18	0.18	30	3
SE195772.143	LB179689.014		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0

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.

OC Pesticides in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.143	LB179689.014		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.17	0.18	30	3
SE195772.157	LB179689.033		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.18	0.18	30	1

OP Pesticides in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.023	LB179687.014	Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
SE195772.097	LB179688.014	Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0

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

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

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

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

OP Pesticides in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.097	LB179688.014		Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	5
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	5
SE195772.133	LB179688.033		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE195772.143	LB179689.014		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	0
SE195772.157	LB179689.033		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.023	LB179687.014	Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	<0.2	<0.2	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	134	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0
		Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
SE195772.049	LB179687.024	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0

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

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

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.049	LB179687.024		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	12
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	11
SE195772.097	LB179688.014		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	5
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	5

PCBs in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.023	LB179687.014	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

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.

PCBs in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.023	LB179687.014		Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	0
SE195772.097	LB179688.014		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	2
SE195772.133	LB179688.033		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	3

pH in soil (1:5)

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195755.005	LB179963.019	pH	pH Units	0.1	6.0	6.321	32	5
SE195772.117	LB179963.018	pH	pH Units	0.1	7.0	6.0	32	15

Soluble Anions (1:5) in Soil by Ion Chromatography

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.117	LB179969.012	Chloride	mg/kg	0.25	71	73	30	2
		Sulfate	mg/kg	5	11	13	72	14

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 %
SE195772.023	LB179694.014	Arsenic, As	mg/kg	1	10	8	41	32
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	14	15	33	2
		Copper, Cu	mg/kg	0.5	12	11	34	11
		Nickel, Ni	mg/kg	0.5	5.4	5.0	40	6
		Lead, Pb	mg/kg	1	26	23	34	15
		Zinc, Zn	mg/kg	2	160	140	31	10
SE195772.049	LB179694.024	Arsenic, As	mg/kg	1	8	9	41	12
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	17	18	33	7
		Copper, Cu	mg/kg	0.5	15	18	33	15
		Nickel, Ni	mg/kg	0.5	3.5	3.9	43	10
		Lead, Pb	mg/kg	1	15	18	36	17
		Zinc, Zn	mg/kg	2	17	19	41	14
SE195772.097	LB179695.014	Arsenic, As	mg/kg	1	7	6	45	19
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	18	15	33	16
		Copper, Cu	mg/kg	0.5	14	15	34	7
		Nickel, Ni	mg/kg	0.5	4.9	5.4	40	10
		Lead, Pb	mg/kg	1	21	24	34	13
		Zinc, Zn	mg/kg	2	47	51	34	9
SE195772.126	LB179695.024	Arsenic, As	mg/kg	1	4	4	55	19

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

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

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

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

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

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.126	LB179695.024	Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	10	13	34	22
		Copper, Cu	mg/kg	0.5	17	13	33	28
		Nickel, Ni	mg/kg	0.5	5.2	5.5	39	5
		Lead, Pb	mg/kg	1	23	22	34	4
		Zinc, Zn	mg/kg	2	630	760	30	18
SE195772.138	LB179696.014	Arsenic, As	mg/kg	1	7	7	44	3
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	17	19	33	8
		Copper, Cu	mg/kg	0.5	13	12	34	11
		Nickel, Ni	mg/kg	0.5	4.5	4.0	42	12
		Lead, Pb	mg/kg	1	19	18	35	5
		Zinc, Zn	mg/kg	2	26	31	37	17
SE195772.147	LB179696.024	Arsenic, As	mg/kg	1	10	6	42	43 ②
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	24	21	32	16
		Copper, Cu	mg/kg	0.5	17	16	33	8
		Nickel, Ni	mg/kg	0.5	4.1	4.2	42	2
		Lead, Pb	mg/kg	1	21	16	36	29
		Zinc, Zn	mg/kg	2	28	21	38	27
SE195772.157	LB179697.013	Arsenic, As	mg/kg	1	5	7	47	28
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	12	14	34	22
		Copper, Cu	mg/kg	0.5	13	11	34	15
		Nickel, Ni	mg/kg	0.5	8.2	7.5	36	9
		Lead, Pb	mg/kg	1	20	23	35	13
		Zinc, Zn	mg/kg	2	31	41	36	27

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.023	LB179687.014		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
SE195772.049	LB179687.024		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE195772.097	LB179688.014		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

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

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

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

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

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.023	LB179685.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.2	4.6	50	8
			d8-toluene (Surrogate)	mg/kg	-	4.5	4.8	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.1	4.5	50	8
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0
SE195772.049	LB179685.024	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.4	5.5	50	3
			d8-toluene (Surrogate)	mg/kg	-	4.1	4.3	50	4
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.4	4.4	50	0
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0
SE195772.097	LB179686.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	3.9	5.2	50	28
			d8-toluene (Surrogate)	mg/kg	-	5.2	5.1	50	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.2	5.0	50	16
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0
SE195772.126	LB179686.026	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.3	4.9	50	12
			d8-toluene (Surrogate)	mg/kg	-	4.6	4.8	50	4
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.2	4.6	50	10
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0

VOCs in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195619A.107	LB179804.021	Monocyclic	Benzene	µg/L	0.5	<0.5	0.0495337349	200	0
		Aromatic	Toluene	µg/L	0.5	<0.5	0.1798032775	200	0
			Ethylbenzene	µg/L	0.5	<0.5	0.0791123965	200	0
			m/p-xylene	µg/L	1	<1	0.1847823636	200	0
			o-xylene	µg/L	0.5	<0.5	0.0908919587	200	0
		Polycyclic	Naphthalene	µg/L	0.5	<0.5	0.0206228913	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	5.3	5.5422181597	30	4
			d8-toluene (Surrogate)	µg/L	-	5.3	5.0465357357	30	5
			Bromofluorobenzene (Surrogate)	µg/L	-	4.6	4.6964489301	30	3
SE195800.010	LB179804.022	Monocyclic	Benzene	µg/L	0.5	<0.5	0.0375278628	200	0
		Aromatic	Toluene	µg/L	0.5	<0.5	0.2156536717	200	0
			Ethylbenzene	µg/L	0.5	<0.5	0.0290175803	200	0
			m/p-xylene	µg/L	1	<1	0.0942712433	200	0
			o-xylene	µg/L	0.5	<0.5	0.0326124892	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.

VOCs in Water (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195800.010	LB179804.022	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	4.5	5.7382766363	30	23
			d8-toluene (Surrogate)	µg/L	-	5.1	5.1085700728	30	1
			Bromofluorobenzene (Surrogate)	µg/L	-	4.6	4.6318328769	30	0

Volatile Petroleum Hydrocarbons in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195772.023	LB179685.014		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	-	4.2	4.6	30	8
			d8-toluene (Surrogate)	mg/kg	-	4.5	4.8	30	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.1	4.5	30	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
SE195772.049	LB179685.024		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	-	5.4	5.5	30	3
			d8-toluene (Surrogate)	mg/kg	-	4.1	4.3	30	4
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.4	4.4	30	0
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE195772.097	LB179686.014		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	-	3.9	5.2	30	28
			d8-toluene (Surrogate)	mg/kg	-	5.2	5.1	30	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.2	5.0	30	16
		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
SE195772.126	LB179686.026		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	-	4.3	4.9	30	12
			d8-toluene (Surrogate)	mg/kg	-	4.6	4.8	30	4
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.2	4.6	30	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

Volatile Petroleum Hydrocarbons in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195619A.107	LB179804.021		TRH C6-C10	µg/L	50	<50	1.0879328041	200	0
			TRH C6-C9	µg/L	40	<40	1.6101475302	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	5.3	5.5422181597	30	4
			d8-toluene (Surrogate)	µg/L	-	5.3	5.0465357357	30	5
			Bromofluorobenzene (Surrogate)	µg/L	-	4.6	4.6964489301	30	3
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	0.0495337349	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	0.5038090726	200	0
SE195800.010	LB179804.022		TRH C6-C10	µg/L	50	<50	0.9524774412	200	0
			TRH C6-C9	µg/L	40	<40	1.4169792672	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	4.5	5.7382766363	30	23
			d8-toluene (Surrogate)	µg/L	-	5.1	5.1085700728	30	1
			Bromofluorobenzene (Surrogate)	µg/L	-	4.6	4.6318328769	30	0
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	0.0375278628	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	0.5433945936	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.

Conductivity and TDS by Calculation - Soil

Method: ME-(AU)-[ENV]AN106

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179963.002	Conductivity of Extract (1:5 as received)	µS/cm	1	300	303	85 - 115	98
	Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	NA	303	85 - 115	98

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179777.002	Exchangeable Sodium, Na	mg/kg	2	NA	72.68	80 - 120	115
	Exchangeable Potassium, K	mg/kg	2	NA	238.12	80 - 120	100
	Exchangeable Calcium, Ca	mg/kg	2	NA	692	80 - 120	99
	Exchangeable Magnesium, Mg	mg/kg	2	NA	134.2	80 - 120	95

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179698.002	Mercury	mg/kg	0.05	0.19	0.2	70 - 130	95
LB179699.002	Mercury	mg/kg	0.05	0.18	0.2	70 - 130	92
LB179700.002	Mercury	mg/kg	0.05	0.18	0.2	70 - 130	89
LB179701.002	Mercury	mg/kg	0.05	0.20	0.2	70 - 130	100

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179687.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	116
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	120
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	121
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	95
		Endrin	mg/kg	0.2	0.2	0.2	60 - 140	119
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	92
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.18	0.15	40 - 130	119
LB179688.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	117
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	123
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	121
		Dieldrin	mg/kg	0.2	0.2	0.2	60 - 140	115
		Endrin	mg/kg	0.2	0.2	0.2	60 - 140	113
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	90
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.19	0.15	40 - 130	125
LB179689.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	104
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	117
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	115
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	92
		Endrin	mg/kg	0.2	0.2	0.2	60 - 140	123
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	89
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.18	0.15	40 - 130	119

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179687.002		Dichlorvos	mg/kg	0.5	1.9	2	60 - 140	93
		Diazinon (Dimpylate)	mg/kg	0.5	1.8	2	60 - 140	88
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.9	2	60 - 140	95
		Ethion	mg/kg	0.2	1.9	2	60 - 140	93
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	86
LB179688.002		Dichlorvos	mg/kg	0.5	1.8	2	60 - 140	92
		Diazinon (Dimpylate)	mg/kg	0.5	1.9	2	60 - 140	94
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.9	2	60 - 140	94
		Ethion	mg/kg	0.2	1.7	2	60 - 140	86
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	84
LB179689.002		Dichlorvos	mg/kg	0.5	1.6	2	60 - 140	79
		Diazinon (Dimpylate)	mg/kg	0.5	1.7	2	60 - 140	86
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.6	2	60 - 140	82
		Ethion	mg/kg	0.2	1.5	2	60 - 140	77
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	84
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	84

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179687.002		Naphthalene	mg/kg	0.1	4.2	4	60 - 140	105
		Acenaphthylene	mg/kg	0.1	4.4	4	60 - 140	110
		Acenaphthene	mg/kg	0.1	4.0	4	60 - 140	100
		Phenanthrene	mg/kg	0.1	4.4	4	60 - 140	110
		Anthracene	mg/kg	0.1	4.3	4	60 - 140	107
		Fluoranthene	mg/kg	0.1	4.0	4	60 - 140	101
		Pyrene	mg/kg	0.1	4.3	4	60 - 140	108
		Benzo(a)pyrene	mg/kg	0.1	4.7	4	60 - 140	118
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	90
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	86
LB179688.002		Naphthalene	mg/kg	0.1	4.2	4	60 - 140	105
		Acenaphthylene	mg/kg	0.1	4.4	4	60 - 140	109
		Acenaphthene	mg/kg	0.1	4.0	4	60 - 140	99
		Phenanthrene	mg/kg	0.1	4.2	4	60 - 140	106
		Anthracene	mg/kg	0.1	4.2	4	60 - 140	105
		Fluoranthene	mg/kg	0.1	4.0	4	60 - 140	101
		Pyrene	mg/kg	0.1	4.2	4	60 - 140	106
		Benzo(a)pyrene	mg/kg	0.1	4.6	4	60 - 140	115
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	90
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	84

PCBs in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179687.002	Arochlor 1260	mg/kg	0.2	0.5	0.4	60 - 140	120
LB179688.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	105

pH in soil (1:5)

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179963.003	pH	pH Units	0.1	7.4	7.415	98 - 102	100

Soluble Anions (1:5) in Soil by Ion Chromatography

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179969.002	Chloride	mg/kg	0.25	97	100	70 - 130	97
	Sulfate	mg/kg	5	97	100	70 - 130	97

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 %
LB179694.002	Arsenic, As	mg/kg	1	330	336.32	79 - 120	98
	Cadmium, Cd	mg/kg	0.3	430	416.6	69 - 131	104
	Chromium, Cr	mg/kg	0.5	35	35.2	80 - 120	98
	Copper, Cu	mg/kg	0.5	310	370.46	80 - 120	85
	Nickel, Ni	mg/kg	0.5	180	210.88	79 - 120	86
	Lead, Pb	mg/kg	1	88	107.87	79 - 120	82
	Zinc, Zn	mg/kg	2	280	301.27	80 - 121	92
LB179695.002	Arsenic, As	mg/kg	1	340	336.32	79 - 120	101
	Cadmium, Cd	mg/kg	0.3	430	416.6	69 - 131	104
	Chromium, Cr	mg/kg	0.5	35	35.2	80 - 120	99
	Copper, Cu	mg/kg	0.5	320	370.46	80 - 120	87
	Nickel, Ni	mg/kg	0.5	190	210.88	79 - 120	88
	Lead, Pb	mg/kg	1	91	107.87	79 - 120	84
	Zinc, Zn	mg/kg	2	280	301.27	80 - 121	93
LB179696.002	Arsenic, As	mg/kg	1	330	336.32	79 - 120	98
	Cadmium, Cd	mg/kg	0.3	430	416.6	69 - 131	104
	Chromium, Cr	mg/kg	0.5	33	35.2	80 - 120	94
	Copper, Cu	mg/kg	0.5	320	370.46	80 - 120	85
	Nickel, Ni	mg/kg	0.5	180	210.88	79 - 120	86
	Lead, Pb	mg/kg	1	88	107.87	79 - 120	82

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

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

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

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179696.002		Zinc, Zn	mg/kg	2	270	301.27	80 - 121	91
LB179697.002		Arsenic, As	mg/kg	1	320	336.32	79 - 120	95
		Cadmium, Cd	mg/kg	0.3	430	416.6	69 - 131	104
		Chromium, Cr	mg/kg	0.5	31	35.2	80 - 120	89
		Copper, Cu	mg/kg	0.5	320	370.46	80 - 120	85
		Nickel, Ni	mg/kg	0.5	180	210.88	79 - 120	84
		Lead, Pb	mg/kg	1	89	107.87	79 - 120	82
		Zinc, Zn	mg/kg	2	280	301.27	80 - 121	92

Trace Metals (Dissolved) in Water by ICPMS

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179906.002		Arsenic, As	µg/L	1	19	20	80 - 120	95
		Cadmium, Cd	µg/L	0.1	19	20	80 - 120	96
		Chromium, Cr	µg/L	1	21	20	80 - 120	105
		Copper, Cu	µg/L	1	19	20	80 - 120	97
		Lead, Pb	µg/L	1	18	20	80 - 120	90
		Nickel, Ni	µg/L	1	20	20	80 - 120	98
		Zinc, Zn	µg/L	5	20	20	80 - 120	99

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179687.002		TRH C10-C14	mg/kg	20	30	40	60 - 140	75
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	83
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	75
	TRH F Bands	TRH >C10-C16	mg/kg	25	30	40	60 - 140	75
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	75
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	70
LB179688.002		TRH C10-C14	mg/kg	20	30	40	60 - 140	75
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	75
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	75
	TRH F Bands	TRH >C10-C16	mg/kg	25	30	40	60 - 140	75
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	78
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	80

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179662.002		TRH C10-C14	µg/L	50	960	1200	60 - 140	80
		TRH C15-C28	µg/L	200	1200	1200	60 - 140	98
		TRH C29-C36	µg/L	200	1400	1200	60 - 140	116
	TRH F Bands	TRH >C10-C16	µg/L	60	1100	1200	60 - 140	88
		TRH >C16-C34 (F3)	µg/L	500	1300	1200	60 - 140	109
		TRH >C34-C40 (F4)	µg/L	500	730	600	60 - 140	121

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179685.002	Monocyclic	Benzene	mg/kg	0.1	2.1	2.9	60 - 140	74
	Aromatic	Toluene	mg/kg	0.1	2.1	2.9	60 - 140	72
		Ethylbenzene	mg/kg	0.1	2.3	2.9	60 - 140	79
		m/p-xylene	mg/kg	0.2	4.8	5.8	60 - 140	82
		o-xylene	mg/kg	0.1	2.3	2.9	60 - 140	80
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.3	5	60 - 140	87
		d8-toluene (Surrogate)	mg/kg	-	3.6	5	60 - 140	73
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.2	5	60 - 140	85
LB179686.002	Monocyclic	Benzene	mg/kg	0.1	2.4	2.9	60 - 140	84
	Aromatic	Toluene	mg/kg	0.1	2.3	2.9	60 - 140	79
		Ethylbenzene	mg/kg	0.1	2.5	2.9	60 - 140	85
		m/p-xylene	mg/kg	0.2	5.2	5.8	60 - 140	89
		o-xylene	mg/kg	0.1	2.5	2.9	60 - 140	87
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.3	5	60 - 140	105
		d8-toluene (Surrogate)	mg/kg	-	4.3	5	60 - 140	86
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.9	5	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

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179804.002	Monocyclic	Benzene	µg/L	0.5	52	45.45	60 - 140	115
	Aromatic	Toluene	µg/L	0.5	54	45.45	60 - 140	118
		Ethylbenzene	µg/L	0.5	53	45.45	60 - 140	118
		m/p-xylene	µg/L	1	100	90.9	60 - 140	112
		o-xylene	µg/L	0.5	50	45.45	60 - 140	110
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	4.7	5	60 - 140	93
		d8-toluene (Surrogate)	µg/L	-	4.8	5	60 - 140	97
		Bromofluorobenzene (Surrogate)	µg/L	-	4.2	5	60 - 140	83

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179685.002		TRH C6-C10	mg/kg	25	<25	24.65	60 - 140	87
		TRH C6-C9	mg/kg	20	<20	23.2	60 - 140	85
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.3	5	60 - 140	87
		d8-toluene (Surrogate)	mg/kg	-	3.6	5	60 - 140	73
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.2	5	60 - 140	85
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	7.25	60 - 140	107
LB179686.002		TRH C6-C10	mg/kg	25	<25	24.65	60 - 140	98
		TRH C6-C9	mg/kg	20	23	23.2	60 - 140	97
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.3	5	60 - 140	105
		d8-toluene (Surrogate)	mg/kg	-	4.3	5	60 - 140	86
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.9	5	60 - 140	99
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	7.25	60 - 140	129

Volatile Petroleum Hydrocarbons in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB179804.002		TRH C6-C10	µg/L	50	980	946.63	60 - 140	104
		TRH C6-C9	µg/L	40	840	818.71	60 - 140	103
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	4.7	5	60 - 140	93
		d8-toluene (Surrogate)	µg/L	-	4.8	5	60 - 140	97
		Bromofluorobenzene (Surrogate)	µg/L	-	4.2	5	60 - 140	83
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	670	639.67	60 - 140	105

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%
SE195772.001	LB179698.004	Mercury	mg/kg	0.05	0.22	0.05	0.2	81
SE195772.051	LB179699.004	Mercury	mg/kg	0.05	0.19	<0.05	0.2	87
SE195772.129	LB179700.004	Mercury	mg/kg	0.05	0.20	<0.05	0.2	93
SE195772.148	LB179701.004	Mercury	mg/kg	0.05	0.21	<0.05	0.2	93

OC Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195772.001	LB179687.004		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	103
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	113
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	117
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	90
			Endrin	mg/kg	0.2	0.2	<0.2	0.2	116
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	-	-
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	77
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.19	0.19	-	125
SE195772.051	LB179688.004		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	124
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	124
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	122
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	0.2	<0.2	0.2	122
			Endrin	mg/kg	0.2	0.2	<0.2	0.2	118
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	-	-
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	79
			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	-	-

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.

OC Pesticides in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195772.051	LB179688.004		Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.18	0.18	-	123
SE195772.134	LB179689.004		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	85
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	87
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	83
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	78
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	83
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	-	-
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	82
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	<1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.19	0.18	-	124

OP Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195772.001	LB179687.004		Dichlorvos	mg/kg	0.5	1.7	<0.5	2	87
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Diazinon (Dimpylate)	mg/kg	0.5	1.8	<0.5	2	90
			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	1.9	<0.2	2	96
			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	2.0	<0.2	2	98
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	7.4	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	-	90
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	86
SE195772.051	LB179688.004		Dichlorvos	mg/kg	0.5	1.7	<0.5	2	84
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Diazinon (Dimpylate)	mg/kg	0.5	1.8	<0.5	2	90
			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	1.8	<0.2	2	88
			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	1.6	<0.2	2	82
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-

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.

OP Pesticides in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195772.051	LB179688.004		Total OP Pesticides*	mg/kg	1.7	6.9	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	86
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	84
SE195772.134	LB179689.004		Dichlorvos	mg/kg	0.5	1.6	<0.5	2	79
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Diazinon (Dimpylate)	mg/kg	0.5	1.7	<0.5	2	86
			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	1.6	<0.2	2	80
			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	1.5	<0.2	2	77
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	6.4	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	88
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	88

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195772.001	LB179687.004		Naphthalene	mg/kg	0.1	4.2	<0.1	4	104
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	4.3	<0.1	4	108
			Acenaphthene	mg/kg	0.1	3.9	<0.1	4	98
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	4.3	<0.1	4	107
			Anthracene	mg/kg	0.1	4.1	<0.1	4	102
			Fluoranthene	mg/kg	0.1	4.1	<0.1	4	100
			Pyrene	mg/kg	0.1	4.3	<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	4.6	<0.1	4	114
			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	4.6	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	4.7	<0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	4.7	<0.2	-	-
			Total PAH (18)	mg/kg	0.8	34	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.4	-	90
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	-	90
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	86
SE195772.051	LB179688.004		Naphthalene	mg/kg	0.1	4.1	<0.1	4	104
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	4.4	<0.1	4	109
			Acenaphthene	mg/kg	0.1	3.9	<0.1	4	98
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	4.2	<0.1	4	106
			Anthracene	mg/kg	0.1	4.2	<0.1	4	105
			Fluoranthene	mg/kg	0.1	4.0	<0.1	4	101
			Pyrene	mg/kg	0.1	4.3	<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	4.5	<0.1	4	113
			Indeno(1,2,3-cd)pyrene	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%
SE195772.051	LB179688.004		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	4.5	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	4.7	<0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	4.6	<0.2	-	-
			Total PAH (18)	mg/kg	0.8	34	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	-	88
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	86
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	84

PCBs in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195772.001	LB179687.004		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	107
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	-	123
SE195772.051	LB179688.004		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	123
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	-	126

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%
SE195772.001	LB179694.004	Arsenic, As	mg/kg	1	49	7	50	84
		Cadmium, Cd	mg/kg	0.3	46	<0.3	50	91
		Chromium, Cr	mg/kg	0.5	56	14	50	85
		Copper, Cu	mg/kg	0.5	77	37	50	81
		Nickel, Ni	mg/kg	0.5	54	12	50	83
		Lead, Pb	mg/kg	1	120	82	50	70 ④
		Zinc, Zn	mg/kg	2	170	130	50	69 ④
SE195772.051	LB179695.004	Arsenic, As	mg/kg	1	56	11	50	90
		Cadmium, Cd	mg/kg	0.3	49	<0.3	50	97
		Chromium, Cr	mg/kg	0.5	68	21	50	94
		Copper, Cu	mg/kg	0.5	63	15	50	95
		Nickel, Ni	mg/kg	0.5	51	6.3	50	89
		Lead, Pb	mg/kg	1	68	30	50	78
		Zinc, Zn	mg/kg	2	79	38	50	82
SE195772.129	LB179696.004	Arsenic, As	mg/kg	1	48	7	50	80
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	89
		Chromium, Cr	mg/kg	0.5	58	14	50	88
		Copper, Cu	mg/kg	0.5	60	18	50	83
		Nickel, Ni	mg/kg	0.5	49	8.3	50	81
		Lead, Pb	mg/kg	1	61	20	50	83
		Zinc, Zn	mg/kg	2	72	41	50	62 ④
SE195772.148	LB179697.004	Arsenic, As	mg/kg	1	52	7	50	89
		Cadmium, Cd	mg/kg	0.3	46	<0.3	50	92
		Chromium, Cr	mg/kg	0.5	64	24	50	81
		Copper, Cu	mg/kg	0.5	58	11	50	94

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.

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

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195772.148	LB179697.004	Nickel, Ni	mg/kg	0.5	49	4.3	50	90
		Lead, Pb	mg/kg	1	65	21	50	88
		Zinc, Zn	mg/kg	2	64	22	50	83

Trace Metals (Dissolved) in Water by ICPMS

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195772.127	LB179906.004	Arsenic, As	µg/L	1	21	<1	20	105
		Cadmium, Cd	µg/L	0.1	21	<0.1	20	103
		Chromium, Cr	µg/L	1	22	<1	20	113
		Copper, Cu	µg/L	1	21	<1	20	107
		Lead, Pb	µg/L	1	19	<1	20	95
		Nickel, Ni	µg/L	1	21	<1	20	106
		Zinc, Zn	µg/L	5	23	<5	20	109

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195772.001	LB179687.025		TRH C10-C14	mg/kg	20	27	<20	40	68
			TRH C15-C28	mg/kg	45	<45	<45	40	108
			TRH C29-C36	mg/kg	45	<45	<45	40	95
			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	26	<25	40	65
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	26	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	130
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-
SE195772.051	LB179688.034		TRH C10-C14	mg/kg	20	32	<20	40	80
			TRH C15-C28	mg/kg	45	<45	<45	40	98
			TRH C29-C36	mg/kg	45	<45	<45	40	85
			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	31	<25	40	78
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	31	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	108
			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%
SE195772.001	LB179685.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	1.8	<0.1	2.9	62
			Toluene	mg/kg	0.1	1.8	<0.1	2.9	63
			Ethylbenzene	mg/kg	0.1	1.9	<0.1	2.9	66
			m/p-xylene	mg/kg	0.2	4.0	<0.2	5.8	69
			o-xylene	mg/kg	0.1	2.0	<0.1	2.9	69
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.5	5.3	-	89
			d8-toluene (Surrogate)	mg/kg	-	3.6	4.2	-	72
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.2	4.4	-	83
		Totals	Total Xylenes	mg/kg	0.3	6.0	<0.3	-	-
			Total BTEX	mg/kg	0.6	12	<0.6	-	-
SE195772.051	LB179686.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	2.1	<0.1	2.9	73
			Toluene	mg/kg	0.1	2.0	<0.1	2.9	70
			Ethylbenzene	mg/kg	0.1	2.2	<0.1	2.9	77
			m/p-xylene	mg/kg	0.2	4.7	<0.2	5.8	81
			o-xylene	mg/kg	0.1	2.3	<0.1	2.9	80
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.4	4.9	-	108
			d8-toluene (Surrogate)	mg/kg	-	4.4	4.1	-	89
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.1	4.2	-	102
		Totals	Total Xylenes	mg/kg	0.3	7.0	<0.3	-	-
			Total BTEX	mg/kg	0.6	13	<0.6	-	-

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.

VOCs in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195772.127	LB179804.023	Monocyclic	Benzene	µg/L	0.5	55	<0.5	45.45	121
		Aromatic	Toluene	µg/L	0.5	57	<0.5	45.45	125
			Ethylbenzene	µg/L	0.5	54	<0.5	45.45	119
			m/p-xylene	µg/L	1	120	<1	90.9	130
			o-xylene	µg/L	0.5	56	<0.5	45.45	124
		Polycyclic	Naphthalene	µg/L	0.5	59	<0.5	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	5.5	4.5	-	110
			d8-toluene (Surrogate)	µg/L	-	5.2	5.2	-	104
			Bromofluorobenzene (Surrogate)	µg/L	-	5.2	4.6	-	104

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195772.001	LB179685.004		TRH C6-C10	mg/kg	25	<25	<25	24.65	72
			TRH C6-C9	mg/kg	20	<20	<20	23.2	68
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.5	5.3	-	89
			d8-toluene (Surrogate)	mg/kg	-	3.6	4.2	-	72
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.2	4.4	-	83
		VPH F	Benzene (F0)	mg/kg	0.1	1.8	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	7.25	85
SE195772.051	LB179686.004		TRH C6-C10	mg/kg	25	<25	<25	24.65	86
			TRH C6-C9	mg/kg	20	<20	<20	23.2	84
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.4	4.9	-	108
			d8-toluene (Surrogate)	mg/kg	-	4.4	4.1	-	89
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.1	4.2	-	102
		VPH F	Benzene (F0)	mg/kg	0.1	2.1	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	7.25	108

Volatile Petroleum Hydrocarbons in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195772.127	LB179804.023		TRH C6-C10	µg/L	50	1200	<50	946.63	129
			TRH C6-C9	µg/L	40	1100	<40	818.71	134
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	5.5	4.5	-	110
			d8-toluene (Surrogate)	µg/L	-	5.2	5.2	-	104
			Bromofluorobenzene (Surrogate)	µg/L	-	5.2	4.6	-	104
		VPH F	Benzene (F0)	µg/L	0.5	55	<0.5	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	890	<50	639.67	137

MATRIX SPIKE DUPLICATES

SE195772 R0

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

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

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

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

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

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.

①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to Analytical Report comments for further information.

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