"H"

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This and the following 252 pages is
the annexure marked " H " referred to in the
Affidavit of Anthony Boskovitz
sworn / ~~affirmed~~
at Edgecliff this 31st day of July 2020
before me

Solicitor / ~~Katherine Boskovitz~~ TIFFANY STOLIAR

CONSOLIDATED PHASE 2 ENVIRONMENTAL SITE ASSESSMENT
6 EDITH STREET, KINGSWOOD NSW 2747

Report:	JN00869 - P2ESA - RN03622
Issued date:	19 June 2020
Prepared for:	Liquid Gold 888 Pty Ltd
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ENVIRONMENTAL HAZMAT OCCUPATIONAL

6 EDITH STREET, KINGSWOOD NSW 2747

Executive Summary

This document is a consolidated Phase 2 (Detailed) Environmental Site Assessment (P2ESA) report for environmental site investigations conducted at 6 Edith Street, Kingswood NSW 2747 (the Site), between September 2019 and February 2020.

September 2019

On the 9 September 2019, EHO Consulting Pty Limited (EHO) were engaged by Mr Anthony Nakhoul of Liquid Gold 888 Pty Ltd (the Client), to undertake a Phase 2 Environmental Site Assessment (P2ESA) of the property located at 6 Edith Street, Kingswood NSW 2747 (the Site).

The objective of the assessment was to provide an assessment of the Site in accordance with the requirements of the NSW State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55), assessing suitability of the Site in support of a development application (DA) submitted by the Client to develop the Site as a boarding house in accordance with developments permissible under the Sydney Regional Development Plan (No.2-1997), (**Ref.11**).

The scope included collection of soil samples from a total of three (3) locations in the south western corner of the property (the front yard) which is where fill has been imported to level the property within the fence line, and submission of the samples to an independent NATA accredited laboratory for analysis of general contaminants of concern including asbestos.

The investigation of fill material placed in the south western section of the property located at 6 Edith Street, Kingswood NSW 2747 for the purposes of levelling the front yard within the fence line has found that the material is unsuitable not only for the proposed site use, that being a boarding house as per the DA currently under submission with Penrith City Council but is also unsuitable for the current site use, that being a single storey detached residence with accessible soil.

February 2020

On the 5 February 2020, EHO revisited the Site, to undertake additional investigation.

The objective of the expanded investigation was to investigate the potential for contaminated fill material to have been used to level in the backyard.

The scope included collection of soil samples from a total of three (3) locations in the eastern portion (backyard) of the Site and submission of the samples to an independent NATA accredited laboratory for analysis of general contaminants of concern including asbestos fibre in soil.

The investigation of fill material placed in the eastern section of the property located at 6 Edith Street, Kingswood NSW 2747 for the purposes of levelling the backyard and former driveway has found that the material encountered is suitable from both a chemical and physical (Asbestos) contamination perspective for both the proposed and current site use.

Material under the footprint of existing structures, those being the house, the garage, the front concrete driveway and a shed/studio in the backyard was not investigated.

June 2020

On the 2 June 2020, EHO revisited the Site, to undertake additional investigation of remaining areas of contamination potential.

The objective of the additional investigation was to investigate the potential for contaminated fill material to have been used in the raised garden beds, the rear driveway and adjacent both sides of the front driveway, as well as to field screen locations sampled in February 2020 for the presence of volatile organic compounds (VOCs).

The scope included collection of soil samples from a total of five (5) locations of the Site and submission of the samples to an independent NATA accredited laboratory for analysis of general contaminants of concern including asbestos.

The investigation of fill material placed in the eastern section of the property located at 6 Edith Street, Kingswood NSW 2747 for the purposes of levelling the backyard and former driveway has found that the material is suitable for both the proposed and current site use.

As per the previous investigations, material under the footprint of existing structures, those being the house, the garage, the front concrete driveway and a shed/studio in the backyard was not investigated.

Conclusions and Recommendations

The investigation of the property located at 6 Edith Street, Kingswood NSW 2747, has found that the fill used for the purposes of levelling the front yard within the fence line is unsuitable not only for the proposed site use, that being a boarding house as per the DA currently under submission with Penrith City Council, but is also unsuitable for the current site use, that being a single storey detached residence with accessible soil.

No VOCs were detected in any of the field screening completed. EHO concludes that based on the results of the combined investigations that the fill material which has been encountered on the Site, is suitable from a chemical and physical (asbestos) contamination perspective for the current and the proposed site use, with the exception of:

- the fill material used to level the south western portion of the Site (the front yard) which has been found to unsuitable for both the current and proposed site use due to the presence of friable asbestos / asbestos fines (FA/AF);
    - action is recommended from a human health perspective to make the site suitable the tenant, visitors and surrounding properties. Actions to be undertaken should be set out in a Remedial Action Plan (RAP) to be prepared for the Site, in accordance with NSW EPA reporting requirements (**Ref.2**).

In the interim EHO makes the following recommendations:

- The Client should notify the property owner, as it is understood the Client is engaged on behalf of the property owner, so that the tenant/s can be informed of the associated risk;
- All care should be taken to avoid disturbing the soil under the grass in the front yard.
    - In particular, care should be taken when mowing the grass to ensure that it is not cut close to the level of the soil.

- The property owner should directly, and/or encourage current/future tenants to maintain the lawn in good condition.

- No new gardens or plants should be established in the front yard;
- Anyone engaged to carry out works of any kind which may include damage/displacement of the lawn and/or disturbance of the underlying fill material in the front yard of the Site, needs to be informed that a human health risk from asbestos fines is associated with such activities.

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1. Introduction

1.1 Background

On the 9 September 2019, EHO Consulting Pty Limited (EHO) were engaged by Mr Anthony Nakhoul of Liquid Gold 888 Pty Ltd (the Client), to undertake a Phase 2 Environmental Site Assessment (P2ESA) of the property located at 6 Edith Street, Kingswood NSW 2747 (the Site).

On the 5 February 2020, EHO returned to the Site expanding the existing P2ESA, to include investigation of the contamination status of the eastern portion (backyard) of the Site.

On the 2 June 2020, EHO returned to the Site to close out investigation of areas of the site identified by Penrith City Council (Council) as still having contamination potential. Those areas were:

- Volatile organic compounds were not tested in-situ using a photoionization detector (during the sampling event carried out 5 February 2020);
- Fill in the rear garden beds and immediately surrounding the shed; and
- Fill material deposited in the garden bed north of the existing (front) driveway.

This report combines the findings of the three (3) investigations.

1.2 Purpose of Investigation

The purpose of the site works carried out as part of the September 2019 investigation was to investigate the depth, physical and chemical characteristics of fill material which historic photos indicated was imported onto the south-west portion of the Site (material used to level the front yard), between 9 May 2012 and 5 May 2016.

The purpose of the February 2020 investigation was the same as that of the September 2019 investigation, except that the target area for investigation was expanded to the eastern portion (backyard) of the Site.

The purpose of the June 2020 assessment was the same as that of the previous investigation, except that the target area for investigation was those areas detailed above as having been identified by Penrith City Council (Council) as still having contamination potential.

1.3 Objective of Assessment

The objective is to provide an assessment of the Site in accordance with the requirements of the NSW State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55), (**Ref.1**), assessing suitability of the Site in support of a development application (DA) submitted by the Client to develop the Site as a boarding house with a basement.

EHO understands that the DA was originally submitted to Council and was rejected as based on the documentation provided in support of the DA, Council could not at the time, with certainty, be satisfied that the Site is not contaminated. EHO have not been provided with any other particulars of the DA.

This consolidated P2ESA report has been prepared to assess the contamination status of the Site.

2. Scope of Work

In order to meet the stated objective EHO carried out the following scope:

- Mobilisation of an experienced contaminated land specialist to the Site on the following dates;
  - 10 September 2019;
  - 10 February 2020;
  - 2 June 2020;
- Undertaking of the requisite service clearance and site familiarisation;
- Collection of a total of 11 primary soil samples from;
  - a total of three (3) locations in the south western corner of the property (the front yard) where fill has been imported to level the property within the fence line;
  - a total of three (3) locations in the northern portion of the property (the backyard), to investigate the presence and extent of any fill;
  - a total of two (2) samples in the raised garden beds in the south eastern corner of the backyard;
  - one (1) sample collected from the fill used to construct the driveway in the northern portion of the backyard;
  - a total of two (2) locations on either side of the driveway in the front yard, including in the garden bed north of the driveway;
- Submission of all soil samples to an independent NATA accredited laboratory to test for the contaminants of potential concern; and
- Comparison of laboratory results against the adopted site assessment criteria; and
  - Production of this consolidated P2ESA report in General accordance with the NSW EPA Contaminated land guidelines - Guidelines for consultants reporting on contaminated land 2020, (**Ref.2**).

3. Site Identification and History

The Site history information below has been summarised from documents provided by Land Insight and Resources Pty Ltd (LI Resources). Copies of the LI Resources documents are provided as **Appendices D and H**.

3.1 Site Identification

The Site is identified as:

- 6 Edith Street, Kingswood NSW 2747;
- Lot 55 on Deposited Plan (DP) – 241989;
- 33°45'54"S / 150°43'34"E;
- Elevation 44 mAHD.

Figures detailing the site location, layout and sampling locations are provided in **Appendix A**.

3.2 Land Zoning

The following land zoning is provided by:

- Penrith Local Environment Plan 2010 – Amendment No.4, (**Ref.3**).
  - Land Zoning Map – Sheet LZN_013

Zone R3 Medium Density Residential

1 Objectives of zone

- To provide for the housing needs of the community within a medium density residential environment.
- To provide a variety of housing types within a medium density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To provide for a concentration of housing with access to services and facilities.
- To enhance the essential character and identity of established residential areas.
- To ensure that a high level of residential amenity is achieved and maintained.
- To ensure that development reflects the desired future character and dwelling densities of the area.

2 Permitted without consent

Home occupations

3 Permitted with consent

Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Centre-based child care facilities; Community facilities; Dual occupancies; Dwelling houses; Emergency services facilities; Environmental protection works; Exhibition homes; Exhibition villages; Flood mitigation works; Group homes; Home-based child care; Home businesses; Home industries; Information and education facilities; Multi dwelling housing; Neighbourhood shops; Oyster aquaculture; Places of public worship; Recreation areas; Respite day care centres; Roads; Secondary dwellings; Semi-detached dwellings; Seniors housing; Shop top housing; Tank-based aquaculture

4 Prohibited

Pond-based aquaculture; Any other development not specified in item 2 or 3

3.3 Land Use

The land use has been assessed by reviewing a total of 15 aerial photographs dating between 1943 and 2019. Observations regarding land use of the Site and surrounding properties are as follows:

- **1943** – Site and surrounding land on all sides is cleared but undeveloped. Edith Street has not been constructed, with Second Avenue (approximately 150 m north) and Jones Street (approximately 150m west) the closest existing roads. Nearest development appears to be a rural residence and sheds fronting Jones Street, approximately 150 – 200 m west of the Site;
- **1965** – Site and surrounding land as per 1943. Buildings are no longer present on the property fronting Jones Street. Urban development of the land to the west of Jones Street and north-east in the vicinity of Anthony Cresent. Elliptical pathway, possibly used for horse training exists immediately north of the Site;
- **1970** - Site and surrounding land as per 1943. Manning Street has been constructed approximately 75 m to the east of the Site. Kingswood Public School has been constructed north-east of the Site at the corner of Second Avenue and Manning Street;
- **1975** – Edith Street has been constructed and urban residential development has occurred on both sides of Edith and Manning Streets as well as on the southern side of Second Avenue between Edith and Jones Streets. Development includes construction of the residence on the Site. Construction has commenced on the initial section University of Western Sydney to the east of Dunstan Avenue, approximately 400 – 500 m east of the Site;
- **1984** – Site and surrounding land generally as per 1975 except, vegetation has established around residences and construction on the initial section University of Western Sydney appears complete. Commercial retail units have been constructed on the corner of Second Avenue and Manning Street, approximately 150 m north of the Site ;
- **1991** - Site and surrounding land generally as per 1984 except, a large residential unit complex has been constructed between Edith and Jones Streets approximately 100 m west of the Site, and the University of Western Sydney has expanded considerably, more than doubling in size with the expansion occurring to the south of the initial campus;
- **1994** - Site and surrounding land generally as per 1991 except, the University has again expanded further to the south west of the previous campus footprint;
- **2002**- - Site and surrounding land generally as per 1994 except, vegetation has established around the University and playing fields cricket and baseball have been established on the northern side of Second Avenue, approximately 200 – 300 m north of the Site;
- **2005** - Site and surrounding land generally as per 2002;
- **2008** – Site and surrounding land generally as per 2005;
- **2009** - Site and surrounding land generally as per 2008 except, a minor expansion of the University Campus at the southern extremity of the former footprint (more than 500 m from the Site;
- **2012** - Site and surrounding land generally as per 2009 except, Newmarch House has been constructed fronting Manning Street approximately 400 m south of the Site and the University campus continues to expand to the south;
- **2015** - Site and surrounding land generally as per 2012 except, area to the south of Newmarch house has been cleared in preparation for construction and the undeveloped area between Newmarch House, Kingswood Public School and the University has had what appears to be unpaved walking/running trails constructed;

- **2017** - Site and surrounding land generally as per 2015 except that, walking/running trails identified in 2015 photo do not appear;
- **2019** - Site and surrounding land generally as per 2017.

Copies of the aerial photographs reviewed are provided in **Appendix D**.

In addition to the aerial photographs reviewed in the preparation of this report, EHO understands that Council have reviewed higher resolution photographs which indicate that fill material was imported onto the south-west portion of the Site between 9 May 2012 and 5 May 2016.

3.4 Contaminated Public Land Register

Site not identified on the register.

No sites notified as contaminated to the EPA within 1 000 m of Site.

3.5 Potentially Contaminated Areas

The following potentially contaminated areas have been searched for within 1 000 m for the Site:

- Defence sites;
  - none identified;
- Former gasworks;
  - none identified;
- PFAS sites;
  - none identified.

3.6 Licencing Under the POEO Act

The Site and surrounding properties within 500 m have been checked for licences held or formerly held under the NSW Protection of the Environment Operations (POEO) Act, 1997 (**Ref.4**). The results of the checks are as follows:

- The Site;
  - no Environmental Protection Licences held or surrendered;
- Surrounding properties;
  - no Environmental Protection Licences held or surrendered;
- All;
  - No clean-up or penalty notices recorded.

3.7 National Pollutant Inventory (NPI)

The Site and surrounding properties within 500 m have been checked for listing on the NPI with the results of the checks as follows:

- Site and surrounding properties;
  - No listings on the NPI.

3.8 Public Register of Properties Affected by Loose-Fill Asbestos Insulation

The Site and surrounding properties within 500 m have been checked for listing on the register with the results of the checks as follows:

- Site and surrounding properties;
    - No listings on the register.

3.9 Former Potentially Contaminating Land

The Site and surrounding properties within 500 m have been checked for the presence of former contaminating land uses with the results of the checks as follows:

- Contaminated legacy sites;
    - None identified;
- Derelict mines and quarries;
    - None identified;
- Historical landfills;
    - None identified;
- Unexploded Ordnance (UXO);
    - None identified.

3.10 Potentially Contaminating Activities

The Site and surrounding properties within 500 m have been checked for the presence of current potentially contaminating activities with the results of the checks as follows:

- Aviation fuel depots and/or terminals;
    - None identified;
- Cattle dips;
    - None identified;
- Dry Cleaners;
    - None identified, closest is on Bringelly Road approximately 600 m north-west of the Site;
- Fire and Rescue Sites/Facilities;
    - None identified;
- Liquid Fuel Depots/Terminals;
    - None identified;
- Mines and Quarries;
    - None identified;
- Power Stations;
    - None identified;
- Service Stations;
    - None identified;
- Substations or Switching Stations;
    - None identifies;
- Telephone Exchanges;
    - None identified;
- Waste Management Facilities;
    - None identified;
- Wastewater Treatment Facilities;
    - None identified;
- Industrial, Manufacturing or Pharmaceutical Facilities;
    - None identified.

3.11 Federal, State and Local Environmental Constraints

The Site and surrounding properties within 200 m have been checked for the presence of Federal, State and Local environmental constraints with the results of the checks as follows:

- Local Environment Plan (LEP) Heritage sites;
  - Site ID – 098; Kingswood Public School, approximately 90 m east;
  - Site ID – 670; Former teacher's residence, approximately 200 m north-east;
- National Heritage List (NHL);
  - None identified;
- Register of the National Estate (RNE);
  - None identified;
- Non-Aboriginal heritage item - Local;
  - None identified;
- Non-Aboriginal heritage item – State Heritage Register (SHR);
  - None identified;
- Commonwealth Heritage List (CHL);
  - None identified;
- World Heritage Area (WHA);
  - None identified.

3.12 Natural Hazards

The Site and surrounding properties within 500 m have been checked for the presence of natural hazards with the results of the checks as follows:

- Bush fire prone land;
  - Not identified on the Site;
  - Identified within the check diameter;
- Fire history
  - None identified;
- Flood hazard;
  - None identified.

3.13 Coastal Management

Coastal management issues are not applicable to the Site.

4. Site Condition and Surrounding Environment

4.1 Site Setting

The Site is located in a street of primarily single storey, brick and tile, detached dwellings with fenced boundaries and is on the eastern site of Edith Street Kingswood NSW 2747. Edith Street is a sealed road in good condition, serviced by concrete kerb and gutters.

Surrounding properties are all residential, with a complex of single storey semi-detached townhouses located on the opposite site on the street on a battle-axe block, behind the first row of houses.

There is no industry in the immediate area nor sensitive receivers other than residences for several hundred metres in any direction. The western boundary of Western Sydney University is located approximately 350 m to the east.

The nearest identified waterway is Werrington Creek, located some 700 m to the east on the eastern side of Western Sydney University.

The topography of the area is generally flat, with Edith Street sloping gently from the south. The yards of the residences are generally raised slightly above the alignment of Edith Street indicating that either, general filling of the lots may have occurred at the time of initial development of the area or that the alignment of Edith Street follows a natural depression. However, Edith Street and the surrounding area do not appear to be flood prone.

The Site was observed to be occupied by a single storey brick and tile residence with an attached single garage and carport, served by a concrete driveway located at the front of the property on the northern side. The north eastern corner of the backyard is occupied by a detached shed/studio of steel construction, which appears to be the original garage for the property, previously accessed via an unpaved driveway running down the northern side of the site, which remains. Observations including the presence of a gravel driveway, suggest that this building was converted to the current use when the later garage was constructed on the northern side of the residence.

The front yard is serviced by a driveway running along the northern boundary, with the lawn to the south of the driveway bordered by low hedges on the house side and by a brick fence on the southern and western sides. The lawn and hedges appeared to be in good condition with no evidence of die-back or stress other than the area has been through an extremely dry winter and appear to be in a similar condition to other properties in Edith Street.

The brick fence has been used as a retaining wall for fill which has been used to make the lawn within the front yard level, whereas the ground level on the outside of the western alignment of the fence is lower and slopes slightly to Edith Street as do most of the other properties in the street.

The backyard to the south of the former driveway and garage is covered with lawn and bordered on the eastern and southern boundaries by raised garden beds, formed with concrete retaining blocks. The lawn in the backyard is in good condition.

The backyard is currently secure and cannot be accessed except via either the house or garage.

No waste, staining of the surface or activities causing dust being generated were observed on the Site.

No odours were noted as coming from the Site.

No surface water body was observed on the Site, however following several days of heavy rain immediately prior to investigation of the backyard, the section of the backyard closest to the house, that is the western portion was saturated at the time of the investigation.

4.1.1 Sensitive Receptors

The following sensitive receptors have been identified within 200 m of the Site:

- Real Life Church (Place of Worship) – 137 m north-east; and
- Kingswood Public School (Primary School) – 146 m north-east.

4.1.2 Soil Landscape

Soil Landscape (Luddenham ERlu):

- Landscape—undulating to rolling low hills on Wianamatta Group shales, often associated with Minchinbury Sandstone. Local relief 50–80 m, slopes 5–20%. Narrow ridges, hillcrests and valleys.
- Extensively cleared tall open forest (wet sclerophyll forest).

Soil Group (Erosional):

- Soils—shallow (<100 cm) dark podzolic soils (Dd3.51) or massive earthy clays (Uf6.71) on crests;
    - moderately deep (70–150 cm) red podzolic soils (Dr2.11, Dr2.41, Dr3.11) on upper slopes;
    - moderately deep (<150 cm) yellow podzolic soils (Dy4.22) and prairie soils (Gn3.26) on lower slopes and drainage lines.

Limitations to Soil Landscape information:

- water erosion hazard,
- localised steep slopes,
- localised mass movement hazard,
- localized shallow soils,
- localised surface movement potential;
- localised impermeable highly plastic subsoil, moderately reactive.

4.1.3 Salinity Hazard

Salinity Hazard:

- Very high
    - Western Sydney Hydrogeological Landscapes

4.1.4 Acid Sulphate Soil

Acid Sulphate Soil (ASS) probability of occurrence:

- Extremely low probability;
    - Altas of Australian Acid Sulfate Soil (Table 1.3.2), Cq(p4): ASS in inland lakes, waterways, wetlands and riparian zones (**Ref.5**).

4.1.5 Geology

The following is a summary of the geological setting of the Site:

- Map sheet;
  - Penrith 1:100 000 Geological Map;
- Symbol;
  - Rwb;
- Formation;
  - Bringelly Shale;
- Group;
  - Wianamatta Group (undifferentiated);
- Era/Period;
  - Mesozoic/Middle Triassic;
- Description;
  - Shale, carbonaceous claystone, claystone, laminite, fine to medium-grained lithic sandstone, rare coal and tuff.

4.1.6 Hydrogeology

The Hydrogeological unit applicable to the Site is late Permian/Triassic sediments (porous media – consolidated).

The following is a summary of the hydrogeological setting of the Site and of groundwater bores within 2 000 m of the Site:

- Aquifer type;
  - Porous, extensive aquifers of low to moderate productivity;
  - Porous extensive, highly productive aquifers;
- Drinking water catchments;
  - None identified;
- Protected Riperian Corridor;
  - Not identified on Site;
  - Werrington Creek falls within the search zone (approximately 650 m east of Site);
- Underground Petroleum Storage Systems;
  - Not identified on Site
  - 7-eleven service station on Great Western Highway (approximately 600 m north of Site);
- Wetlands;
  - Not identified on Site;
  - Werrington Creek falls within the search zone (approximately 650 m east of Site).

4.1.7 Groundwater Direction

4.1.7.1 Localised

Based on the topography and receiving water bodies the localised groundwater flow would be to the east, towards Werrington Creek.

4.1.7.2 Regional

Based on the topography and receiving water bodies the regional groundwater flow would be to the south and west, towards the Nepean River.

4.1.8 Groundwater Dependent Ecosystems

Ecosystems which rely on either the surface expression of groundwater or the subsurface presence of groundwater have not been identified within 500 m of the Site.

4.1.9 Groundwater Bores

- Groundwater Bores;
  - Not identified on Site;
  - 15 registered bores identified within the search zone;
    - Water supply, manufacturing and industry (x 3);
      - All north-east of Site;
      - 1 290 – 1 340 m from Site;
    - Monitoring (x 10)
      - Nine (9) south-west of Site, 1 521 – 1 878 m from Site;
      - One (1) north-east of Site, 1 960 m from Site;
    - Irrigated agriculture;
      - One (1) south of Site, 1 725 m from Site;
    - Household;
      - One (1) south of Site, 1 725 m from Site;
    - See summary for addition details (**Appendix H**);

Based on a review of the available data, standing water levels are recorded as being between 6 – 69 m below the top of bore. As standing water levels as measured in bores are resultant of the pressure of the overlying material above the aquifer, it is reasonable to expect that the level of the actual aquifer intercept would be considerably lower than the standing water levels recorded.

4.1.10 Surface Water

4.1.10.1 Surface Water Features

No surface water features were observed on the Site.

The nearest receiving water body is Werrington Creek, approximately 650 m east of the Site.

4.1.10.2 Surface Water Direction

Based on the topography surface water at the Site flows toward Edith Street, for collection in the local stormwater system. Collected flow is expected to discharge to Werrington Creek, east of the Site before discharging to the Hawkesbury River to the north. Due to the topography the creeks in the Kingswood area generally flow toward the north-east and discharge to the Hawkesbury River, rather than the closer Nepean River to the south and west.

5. Sampling and Analysis Plan and Methodology

5.1 Data Quality Objectives

The DQO process is a systematic planning tool based on the scientific method for establishing criteria for data quality and for developing data collection designs. The DQO defines the experimental process required to test a hypothesis. The DQO process has been developed to ensure that efforts relating to data collection are cost effective, by eliminating unnecessary, duplicative or overly precise data whilst at the same time, ensuring the data collected is of sufficient quality and quantity to support defensible decision making.

The DQO process consists of seven steps, which are designed to clarify the BPS APECS objectives, define the appropriate type of data and specify tolerable levels of potential decision errors. The seven-step DQO process adopted for the ESA can be summarised as:

- **Step 1: State the Problem** – concisely describe the problem to be studied. Review prior studies and existing information to gain a sufficient understanding to define the problem.
- **Step 2: Identify the Decision** – identify what questions the BPS APECS will attempt to resolve, and what actions may result.
- **Step 3: Identify the Inputs to the Decision** – identify the information that needs to be obtained and the measurements that need to be taken to resolve the decision statement.
- **Step 4: Define the assessment boundaries** – specify the time periods and spatial area to which decisions will apply. Determine when and where data should be collected.
- **Step 5: Develop a Decision Rule** – define the statistical parameter of interest, specify the action level, and integrate the previous DQO outputs into a single statement that describes the logical basis for choosing among alternative actions.
- **Step 6: Specify Tolerable Limits on Decision Errors** – define the decision maker's tolerable decision error rates1 based on a consideration of the consequences of making an incorrect decision.
- **Step 7: Optimise the Design** –evaluate information from the previous steps and generate alternative data collection designs. Choose the most resource-effective design that meets all DQOs.

5.2 Quality Assurance and Quality Control

To assess the achievement of the project DQOs, data quality indicators (DQIs), precision, accuracy, representativeness, comparability, completeness and sensitivity are employed. The DQIs are defined as follows:

- **Precision** is a measure of the agreement between duplicate or replicate samples.
- **Accuracy** is a measure of the agreement between an experimental determination and the true values of the parameter being measured.
- **Representativeness** is a measure of how closely the measured results reflect the actual concentration or distribution of the chemical constituent in the sample of each environmental medium.
- **Comparability** is a qualitative assessment made to express the confidence with which one data set may be compared with another.
- **Completeness** is a quantitative measure defined as the percentage of total measurements made that are judged to be valid compared to the total number of measurements that were proposed to be made.

- **Sensitivity** is a measure of the capability of measuring constituent accurately at low levels.

DQIs have been used during this P2ESA to assess the achievement of both field and laboratory procedures, in accordance with the requirements of NSW EPA Site Auditor Guidelines (2017) (**Ref.6**) and NEPC (2013) (**Ref.7**).

5.3 Contaminants of Potential Concern

Despite the site history indicating that contamination of the Site as a result of on-site activities or the uses and or/activities on surrounding properties, the following contaminants of potential concern have been analysed based on the importation of fill to the Site from an unknown source:

- Total recoverable hydrocarbons (TRH);
- Benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN);
- Polycyclic aromatic hydrocarbons (PAH);
- Phenols;
- Polychlorinated Biphenyls (PCBs);
- Organochlorine Pesticides (OCPs);
- Metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn); and
- Asbestos
    - Identification in bulk materials; and
    - Quantification in soil (%w/w).

5.4 Sampling Strategy

In order to meet the stated objective, the following sampling strategy was adopted, based on the requirements of the NSW EPA Sampling Design Guidelines (**Ref.8**) and the Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia 2009 (**Ref 9**). Collection of a total of 11 primary soil samples from;

- a total of three (3) judgemental locations in the south western corner of the property (the front yard) where fill has been imported to level the property within the fence line.
- a total of three (3) judgemental locations in the northern portion of the property (the backyard), to investigate the presence and extent of any fill;
- Screening of the front yard samples with a Photoionization Detector (PID) to assess for the presence of volatile compounds;
    - As volatile compounds were not detected in the front yard where the majority of site filling has occurred, a PID was not used during the initial investigation of the backyard, as it was considered that the likelihood of encountering volatile organic compounds (VOCs) was low;
        - Due to Council's issues this approach, the sampled locations in the backyard were later field screened for VOCs with a PID during the subsequent sampling event carried out at the Site.
- a total of two (2) judgemental location in the garden beds in the backyard;
- one (1) judgemental location in the driveway in the backyard;
- a total of two (2) judgemental locations in the front yard on either side of the driveway, including the garden bed north of the driveway.

The Site is approximately 615 m2. Eleven (11) sampling locations is compliant with the requirements of both the NSW EPA Sampling Design Guidelines (**Ref.8**) and the Western Australian Asbestos Assessment Guidelines (**Ref.9**), for sites of up to 1 000 m2.
The equivalent sampling density in points/hectare is 179. The diameter of the hotspot that can be detected with 95% confidence based on the sampling density adopted is <10 m2, which is greater than the largest accessible area at the Site.

The sampling density adopted was in to allow statistical analyses to be completed of the front yard and backyard separately. This was in order to provide the greatest range of treatment and/or disposal for contaminated materials encountered on the Site.

5.5 Methodology

The front yard of the Site was examined during the service clearance to ascertain the zones of deepest fill and a total of three (3) boreholes advanced through the fill and into the natural ground using a petrol-powered auger equipped with a 200 mm diameter spiral auger.

Prior to bore advancement the lawn at each location was cut and lifted in a single piece and placed to the side.

Plastic was laid on the lawn adjacent each of the bores and the cuttings from each bore were placed onto the plastic in order of advancement to allow logging and prevent potential contamination of the surface as the bores were advanced. Copies of bore/sample logs are provided as **Appendix C** to this report.

The backyard of the Site was investigated using a similar methodology as for the front yard, however pits were advanced with a shovel rather than an auger being used, as the backyard was investigated immediately following a period of several days of intense rainfall. It was considered that given the saturated condition of the ground the use of a shovel to advance testpits, rather than the use of rotary auger would disturb the material less, providing a better opportunity to observe the strata. This decision was made after documentation for the investigation had commenced and so the resulting testpits and samples remain designated as boreholes. Both bore advancement using an auger and testpit excavation using a shovel are accepted as industry standard methods for the investigation of shallow soils.

Samples were collected from the cuttings or excavated materials for laboratory analysis and field screening for volatile compounds with a photo-ionisation detector (PID). Samples were taken from the full depth of the fill using a stainless-steel trowel to loosen the material and single use nitrile gloves to collect the samples by hand and place them into the sampling containers. Samples for chemical analysis were placed directly into jars with sealable lids provided by the laboratory. Samples for asbestos analysis were double bagged in sealable zip lock bags.

All samples for chemical analyses were placed into a cooler containing ice as soon as practicable after PID screening.

Field screening for VOCs with the PID in previously sampled locations was undertaken by creating a hole of approximately 30 mm diameter by driving a steel bar at least 100 mm below the existing site surface,

covering the location with plastic as soon as the bar was withdrawn and inserting the PID below the plastic and into the top portion of the resulting hole.

Following sample collection, the boreholes were reinstated by tipping the cuttings/excavated materials back into the holes and tamping down with a shovel. Finally, the section of grass was replaced level with the surrounding lawn and watered to encourage regrowth.

Samples were transported directly from the Site to the laboratory by road.

5.6 Site Assessment Criteria

The NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013) **(Ref.7)** criteria were adopted as site assessment criteria for the purpose of the P2ESA. The NEPC NEPM framework is based on a matrix of human health and ecological soil and groundwater investigation and screening levels and guidance for specific contaminants.

5.6.1 Chemical Assessment

NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013) – Schedule B1; Guideline on Investigation Levels for Soil and Groundwater. **(Ref.7)**

- Table 1A(1) Health investigation levels (HILs) for soil contaminants
  - Residential A – Residential with garden/accessible soil.
- Table 1A(3) Soil Health Screening Levels (HSLs) for vapour intrusion
  - HSL A & HSL B; Low – high density residential: Clay - 0 m to <1 m.
    - Where values for Clay are not provided in the table, the closest available values have been adopted as a site specific screening criteria;
- Table 1B(5) Generic EILs for aged As, fresh DDT and fresh naphthalene in soils irrespective of their physiochemical properties;
  - Ecological Investigation Levels (mg total contaminant/kg)
    - Urban residential and public open space;
- Table 1B(6) ESLs for TPH fractions F1-F4, BTEX and benzo(a)pyrene
  - Urban residential and public open space.

5.6.2 Asbestos Assessment

NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013) – Schedule B1; Guideline on Investigation Levels for Soil and Groundwater.

- Table 7. Health screening levels for asbestos contamination in soil
  - Residential A – with garden/accessible soil.

6. Field Quality Assurance (QA) and Quality Control (QC)

6.1 Details of Sampling Team

Sampling was completed on each occasion by a qualified scientist from EHO, with over 20 years of directly relevant contaminated site assessment experience.

6.2 Decontamination Procedures

The sampling trowel and auger or shovel were wiped down so as to be visually free of soil and/or contaminants between each borehole using disposable alcohol wipes. Samples were not collected from the auger, shovel or trowel, which were only used to advance the sampling locations. All samples were collected by hand using single-use

All gloves, wipes and plastic were collected and double bagged for appropriate offsite disposal.

6.3 Logging of Sampling Locations

Each sampling location was logged, with copies of the location logs provided in **Appendix C**.

6.4 Chain of Custody Records

Samples were transported directly from the Site to the laboratory by road and submitted for analysis under standard Chain of Custody (CoC) protocols.

Copies of the CoCs submitted to the laboratory are provided in **Appendix E**.

6.5 Field Duplicates

A total of two (2) intra-laboratory field duplicates were collected during the investigations.

The field duplicate frequency was 1:5.5 which is in excess of the requirement of 1:20 recommended by Australian Standard 4482 -2005: Guideline to the investigation and sampling of sites with potentially contaminated soil (**Ref.10**).

The duplicate splitting technique used was to proportional add even amounts of the same handful of soil to the primary and duplicate sample containers, with at least three such additions used to fill each jar. The material was not mixed prior to collection to minimise potential for loss of volatiles which may have been present.

The relative percentage differences (RPDs), between the results for the primary samples and the duplicate samples indicate acceptable limits for all analytes tested except for:

- Sample pair F1 / D3 – Chromium, RPD 134.5%; and
- Sample pair F1 / D3 – Nickel, RPD 149.7%.

None of the other results for the above sample pair exceed the RPD criteria adopted for the purposes of the investigation and as a result it is concluded that the most likely cause of the exceedances is the heterogeneity of the soil sampled. Therefore, these results should not be considered to create material uncertainty in the data set used to assess the investigations of the Site.

A summary table of the duplicate results is provided in **Appendix B**.

6.6 Rinsate Samples

Rinsate samples were not collected. This is not considered to create significant uncertainty as to the reliability of the assessment data as each sample was collected directly by hand using a new, single-use, disposable nitrile glove directly from the test location not from another piece of equipment.

Hand tools were only used when needed to advance locations and did not come into direct contact with the material collected. As an added precaution against cross contamination between samples all hand tools used were thoroughly cleaned between each location with single use, disposable wipes.

6.7 Blank and Spike Samples

One (1) trip blank and one (1) trip spikes were submitted as part of the assessment.

- Trip blank;
  - No analytes were detected above the level of the laboratory limit of reporting (LOR) in the trip blank;
- Trip spikes;
  - All trip spike analyte recoveries were between the adopted acceptance criteria (70-130%).

Based on the above results it is considered that the representativeness of the data set used is suitable to assess the investigations of the Site.

6.8 Field QA /AC Conclusions

The field QA/QC adopted for the purposes of this assessment are considered to meet the requirements of the DQOs for the project.

Where uncertainty has been identified, further consideration of the potential for the uncertainty to affect the reliability of the data set, used for this assessment, indicates that any such potential is low.

As a result, the field data set used for the purpose of this assessment should be considered to be reliable.

7. Laboratory QA and QC

The following section summarises the findings of the laboratory QA/QC documentation provided with the certificates of analysis (SGS SE197563 RO, 19 Sept 2019 and SGS SE202652 RO, 14 Feb 2020). Copies of both laboratory QA/QC statements are provided in **Appendix G**.

7.1 Sample Holding Times

The laboratory specified holding times for sample extraction and analysis were met for all analytes and for all samples, in both sample batches submitted.

7.2 Surrogate Recoveries

The laboratory specified surrogate recovery limits were met for all analytes and for all samples, in both sample batches submitted except for the following:

- SGS SE197563 RO, 19 Sept 2019;
    - d8-toluene;
        - VOCs in soil – Sample S1 (130%);
        - Volatile Petroleum Hydrocarbons in soil – Sample 1 (130%); and
            - Both recoveries equal to the laboratory specified upper limit 130%.

7.3 Method Blanks

The laboratory specified limits for method blank detections were met for all analytes and for all samples, in both sample batches submitted.

7.4 Duplicates

The laboratory specified relative percentage differences (RPDs) for laboratory duplicates were met for all analytes and for all samples, in both sample batches submitted except for the following:

- SGS SE197563 R0, 19 Sept 2019
    - Phenanthrene (97%);
    - Fluoranthene (80%);
    - Pyrene (66%); and
    - Total PAH (57%)
        - The laboratory has stated that the duplicates failed to meet the specified RPDs for the above analytes due to sample heterogeneity.
- SGS SE202652 R0, 14 Feb 2020
    - Arsenic (As) – (101%);
        - Due to sample heterogeneity;
    - Copper (Cu) – (112%);
        - Due to the concentration being close to the limit of reporting (LOR).
- SGS SE207037 R0, 10 Jun 2020
    - Lead (Pb) – (86%);
        - The laboratory has stated that the duplicates failed to meet the specified RPDs for the above analytes due to sample heterogeneity.

7.5 Laboratory Control Samples

The laboratory specified control sample (LCS) recovery limits were met for all analytes and for all samples, in both sample batches submitted.

7.6 Matrix Spikes

The laboratory specified matrix spike (MS) recovery limits were met for all analytes and for all samples, with the exception of the following:

- SGS SE207037 R0, 10 Jun 2020
    - Lead (Pb) – (277%);
        - Recovery failed acceptance criteria due to the presence of significant concentration of analyte (ie, the concentration of analyte exceeds the matrix spike level).

7.7 Laboratory QA/QC Conclusion

A review of the laboratory QA/QC documentation shows that for the vast majority of results the specified QA/QA criteria were met in full.

Where outliers occurred, they were highlighted and an explanation provided by the laboratory as to the reason.

As a result, the analytical data sets provided by SGS for the purposes of this assessment should be considered reliable and fit for purpose.

8. Results

8.1 Characteristics of Fill

Logs detailing the soil profile in each of the sampling locations are provided in **Appendix C**.

8.1.1 Front Yard

8.1.1.1 Front Lawn

Fill was identified in all bores advanced in the south west portion of the Site in depths from 0.25 m below ground level (mbgl) toward the house, increasing up to 0.43 mbgl toward the front fence.

The fill encountered was typically Silty SAND / Sandy SILT with some gravel and tile fragments, dry, loosely compacted and low plasticity.

The underlying natural soil was typically Sandy Silty CLAY / Clayey SILT, compact and of low-med plasticity.

8.1.1.2 Driveway & Garden

Fill was identified in both of the bores advanced either side of the front driveway to a depth of 0.16 mbgl, the northern bore being advanced in a shallow garden bed. This garden bed does not contain soil but rather is formed by the placement of a thin layer of wood chip over the fill used to form the base of the driveway.

The fill encountered was typically coarse gravel on the southern side of the driveway and woodchip on the northern side of the driveway both over Sandy GRAVEL, compact and of low plasticity.

8.1.2 Back Yard

8.1.2.1 Back Lawn

Fill was identified in only one (1) of three (3) test pits advanced in the northern portion of the Site, to a depth of 0.14 mbgl, adjacent the former driveway.

The fill encountered was Silty SAND, non-plastic and saturated. Unlike the fill encountered in the front yard, the fill observed in the backyard did not include building debris.

The backyard generally has thicker lawn than the front yard and was found to have a deeper layer of topsoil being between 6 - 9 cm thick. The topsoil in the backyard is a Clayey Silty SAND/Sandy SILT. Debris was not observed in the topsoil in any of the locations investigated.

The underlying natural soil was similar in type and appearance to that encountered in the front yard, being Sandy CLAY, of low-med plasticity, however recent rains had reduced the compact nature of the natural clay.

Visual and/or olfactory evidence of contamination was not encountered in any of the locations investigated in the backyard.

The backyard closest to the house was the wettest section and free water was observed flowing into BH4 from within the topsoil and fill material. This was observed to a lesser extent in BH5 and reduced to a slow weep in BH6 in the eastern portion of the yard.

8.1.2.2 Gardens

Fill was encountered in the raised garden beds in the backyard to a thickness of between 0.25 – 0.35 m.

The fill encountered was Silty SAND, with woodchip, bark and plant debris, dry and loose.

8.1.2.3 Back Driveway

Fill forming the driveway between the residence and

8.2 Laboratory Analyses

The laboratory engaged for the purposes of this assessment was SGS who hold current NATA accreditation for all analyses undertaken. A copy of the SGS Certificate of Analysis provided as **Appendix F**.

8.3 Chemical Results

8.3.1 Chemical Results Exceeding Criteria

No chemical result was found to exceed the chemical site screening criteria in any sample, for any of the analytes which this assessment has considered. Potential chemical contaminants screened are as listed in Section 2.1 of this report.

8.3.2 Chemicals Detected but Not Exceeding Criteria

Table 1 summarises chemical contaminants detected above the laboratory limits of reporting (LOR) but not exceeding the adopted site assessment criteria. Where analytes have not been detected above the LOR it is stated within the table.

Table 1 Chemical Assessment Summary

Chemical	LOR (mg/kg)	Range of Results (mg/kg)	Assessment Criteria (mg/kg) NEPM 2013 Ref.2
Metals			
– Arsenic (As)	– 1	– 1 - 8	– 100
– Cadmium (Cd)	– 0.3	– <0.3 – 0.4	– 20
– Chromium (Cr)	– 0.5	– 4.3 - 20	– 100

Chemical	LOR (mg/kg)	Range of Results (mg/kg)	Assessment Criteria (mg/kg) NEPM 2013 Ref.2
– Copper (Cu)	– 0.5	– 3.4 - 98	– 6000
– Mercury (Hg)	– 0.05	– <0.05 – 0.38	– 10
– Nickel (Ni)	– 0.5	– 3 - 13	– 400
– Lead (Pb)	– 1	– 6 - 120	– 300
– Zinc (Zn)	– 2	– 21 - 330	– 7400
PAH			
– Carcinogenic PAHs	– 0.3	– <0.3 – 0.7	– 3
– Total PAHs	– 0.8	– <0.8 - 3	– 300
TRH			
– F1	– 25	– All less than LOR	– 50 [1]
– F2	– 25	– All less than LOR	– 120 [1]
– F3	– 90	– <90 – 920	– 1300
– F4	– 120	– <120 – 360	– 5600
BTEXN			
– Benzene	– 0.1	– All less than LOR	– 0.5
– Toluene	– 0.1	– All less than LOR	– 160
– Ethylbenzene	– 0.1	– All less than LOR	– 55
– Xylenes	– 0.3	– All less than LOR	– 40
– Naphthalene	– 0.1	– All less than LOR	– 3
Speciated Phenols	0.5 – 2	All less than relevant LOR	100 [1]
OC & OP Pesticides	0.1 – 0.5	All less than relevant LOR	6 [1]
PCBs	0.2	All less than LOR	1

1. *Lowest single analyte criteria for chemical group (most conservative criteria)*
2. *Tabulated results are combined from both investigations (Sept 2019 and Feb 2020).*
3. *A full results summary table with comparison of chemical analyses to the adopted site assessment criteria is presented in* ***Appendix B****.*

3.1.1 Asbestos

Asbestos was detected as asbestos fines in two (2) of the six (6) samples submitted to the laboratory. Both samples in which asbestos was detected were in fill collected from the south western portion of the Site (front yard). Table 2 summaries the concentration of asbestos in soil.

Table 2 Asbestos in Soil

Sample No	Location	Form of Asbestos Detected	Asbestos observed in soil	Estimated Fibres in Soil (%w/w)	Result >2mm-<7mm (%w/w)	Assessment Criteria – FA/AF (%w/w)
S1	Front yard	>2mm - <7mm FA/AF	Yes	<0.01	0.001	0.001
S2		None detected	No	<0.01	-	
S3		>2mm - <7mm FA/AF	Yes	<0.01	0.002	
F2		None detected	No	<0.01	-	
F3		None detected	No	<0.01	-	
BH4	Backyard	None detected	No	<0.01	-	
BH5		None detected	No	<0.01	-	
BH6		None detected	No	<0.01	-	
G1		None detected	No	<0.01	-	
G2		None detected	No	<0.01	-	
F1		None detected	No	<0.01	-	

1. *A full results summary table with comparison of asbestos results to the adopted site assessment criteria is presented in* ***Appendix B****.*

4. Discussion

4.1 Soil

4.1.1 Front Yard

The laboratory results indicate that the fill material which has been placed in the front yard of the Site to level the yard within the fence line and the material on both sides of the driveway, including the small garden bed on the northern side, is suitable from a chemical contamination perspective for the proposed site use, that being a boarding house. However, asbestos in the form of asbestos fines (>2 mm /<7 mm) has been detected in two (2) of the three (3) samples collected in the south western portion within the fill used to level the yard and at concentrations equal to, or greater than the adopted site criteria for this assessment (see Section 5.6). This means that the fill present in the south-western corner of the front yard is unsuitable, not only for the proposed but also the current site use.

4.1.2 Back Yard

The laboratory results indicate that the fill material which has been placed in the north-western section of the back yard of the Site, to level the yard and construct the driveway and the fill within the raised garden beds in the south eastern corner of the yard is suitable from both a chemical and physical (asbestos) contamination perspective, for current and the proposed site use, that being a boarding house with a basement.

4.1.3 Inaccessible Areas

The presence of fill under the footprint of inaccessible areas including the house, the garage, the concrete driveway and the studio/shed has not been assessed and cannot be discounted. Once the structures are removed from site, the footprints should be investigated for the presence of fill materials. Should fill be identified it will need to be sampled, analysed, assessed and managed in accordance with any contaminant characteristics exhibited.

4.1.4 Groundwater

Results indicate that the potential for the Site to contaminate groundwater is negligible. It is noted however, that the proposed development includes a basement. A review of the surrounding groundwater data indicates that any basement excavation is unlikely to intercept the regional aquifer due to it being likely to be several to tens of metres below the site surface but due to the distance of any registered groundwater bores (several hundred metres to the closest) from the site, the potential for a basement excavation to intercept a perched or local near surface aquifer cannot be discounted. Such an occurrence would need to be managed under the provisions of a site-specific dewatering plan the requirements of which should be noted within the site environmental management plan (EMP) for the proposed development, to be completed and implemented, if shallow groundwater is intercepted during excavation.

4.1.5 Duty to Report Contamination

Based on guidance provided in the NSW EPA Guidelines on the Duty to report Contamination under the Contaminated Land Management Act 1997, the duty to report the property as a contaminated site would not be triggered (No Duty to Report) as long as the lawn in the front yard is maintained in a

healthy condition, is not damaged/or displaced and no disturbance of the underlying fill, used to level the front yard of the Site occurs.

5. Conclusion and Recommendations

5.1.1 Conclusion

The investigation of the property located at 6 Edith Street, Kingswood NSW 2747, has found that the fill used for the purposes of levelling the front yard within the fence line is unsuitable not only for the proposed site use, that being a boarding house as per the DA currently under submission with Penrith City Council, but is also unsuitable for the current site use, that being a single storey detached residence with accessible soil.

No VOCs were detected in any of the field screening completed. EHO concludes that based on the results of the combined investigations that the fill material which has been encountered on the Site, is suitable from a chemical and physical (asbestos) contamination perspective for the current and the proposed site use, with the exception of:

- the fill material used to level the south western portion of the Site (the front yard) which has been found to unsuitable for both the current and proposed site use due to the presence of friable asbestos / asbestos fines (FA/AF);
    - action is recommended from a human health perspective to make the site suitable the tenant, visitors and surrounding properties. Actions to be undertaken should be set out in a Remedial Action Plan (RAP) to be prepared for the Site, in accordance with NSW EPA reporting requirements (**Ref.2**).

EHO consider that the objectives of this consolidated P2ESA have been met in full.

5.1.2 Recommendations

As the fill material which has been investigated in the south western portion of the Site (in the front yard) has been found to unsuitable for both the current and proposed site use, action is recommended from a human health perspective to make the site suitable the tenant, visitors and surrounding properties. Actions to be undertaken should be set out in a Remedial Action Plan (RAP) to be prepared for the Site, in accordance with NSW EPA requirements (**Ref.2**).

In the interim EHO makes the following recommendations:

- The Client should notify the property owner, as it is understood the Client is engaged on behalf of the property owner, so that the tenant can be informed of the associated risk;
- All care should be taken to avoid disturbing the soil under the grass in the front yard.
    - In particular, care should be taken when mowing the grass to ensure that it is not cut close to the level of the soil.
    - The property owner should directly, and/or encourage current/future tenants to maintain the lawn in good condition.
- No new gardens or plants should be established in the front yard;
- Anyone engaged to carry out works of any kind which may include damage/displacement of the lawn and/or disturbance of the underlying fill material in the front yard of the Site, needs to be informed that a human health risk from asbestos fines is associated with such activities.

6. References

1. NSW State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55).
2. NSW EPA (2020), Contaminated Land Guidelines – Guidelines for consultants reporting on contaminated land.
3. Penrith Local Environment Plan 2010 – Amendment No.4.
4. NSW Protection of the Environment operations Act, 1997 / No.156;
5. CSIRO; Altas of Australian Acid Sulfate Soil (Table 1.3.2), Cq(p4): ASS in inland lakes, waterways, wetlands and riparian zones.
6. NSW EPA: Contaminated Land Management – Guidelines for the NSW site Auditor Scheme (3rd Edition), 2017.
7. NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013) – Schedule B1; Guideline on Investigation Levels for Soil and Groundwater.
8. NSW EPA: Contaminated Sites – Sampling design Guidelines, 1995.
9. Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia 2009.
10. Australian Standard 4482-2005 Guide to the investigation and sampling of sites with potentially contaminated soil.
11. Sydney Regional Development Plan (No.2-1997).

7. Limitations

Observations and sampling/test results were indicative of the conditions present at the time of our investigation are a snapshot of conditions as they were at the time of the investigation, and may not be representative of past or future conditions.

Our report is limited in to the agreed scope of works outlined in our fee proposal.

The report has been prepared for the benefit of the Client and no other party. EHO Consulting assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of EHO Consulting or for any loss or damage suffered by any other party in relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

EHO Consulting will not be liable to update or revise the report to take into account any events, emergent circumstances or facts occurring or becoming apparent after the date of the report.

The scope of services did not include any assessment of the title to nor ownership of the properties, buildings and structures referred to in the report, nor the application or interpretation of laws in the jurisdiction in which those properties, buildings and structures are located.

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Appendix A – Figures

APPENDIX A

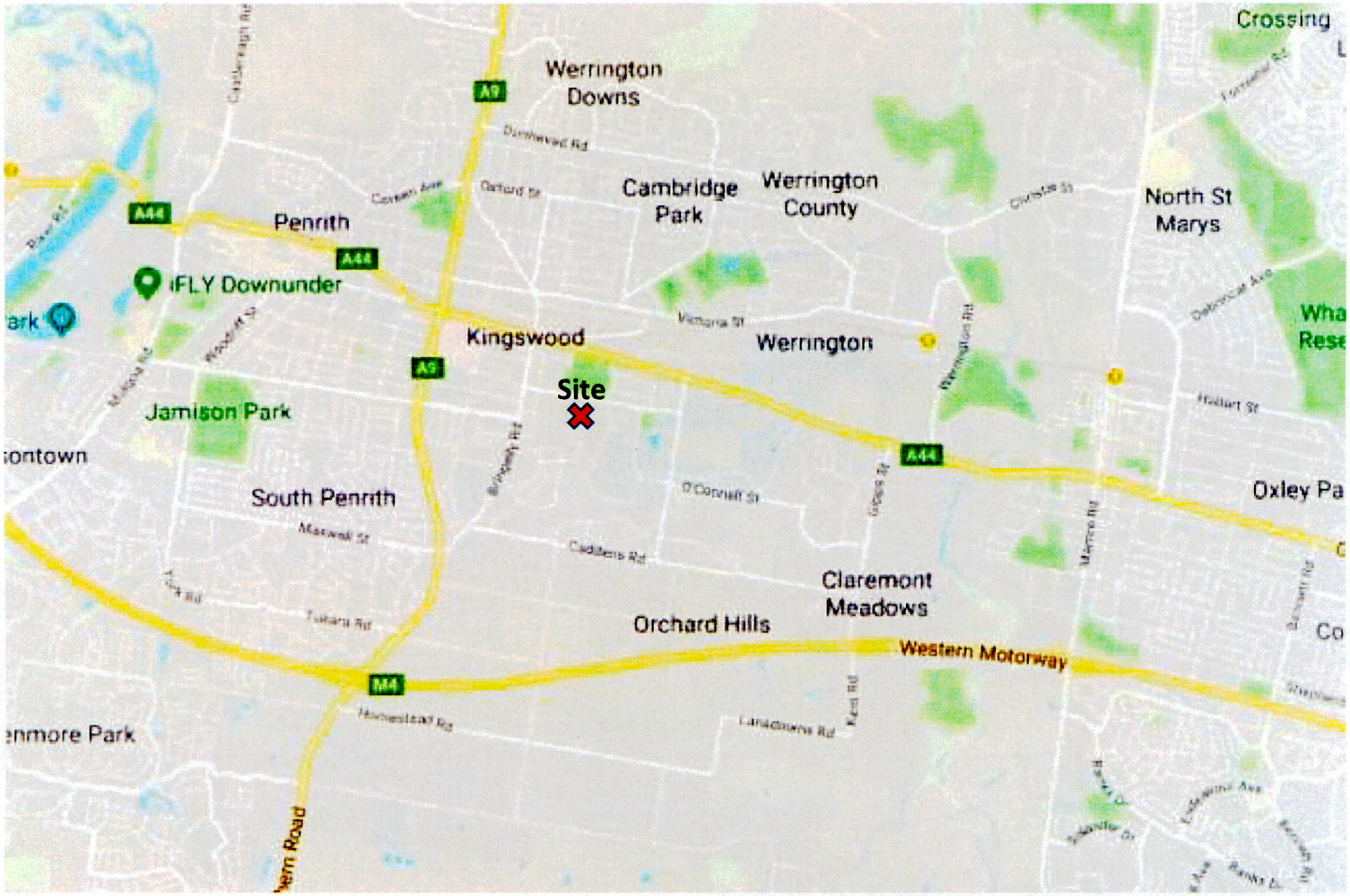

FIGURE 1 – SITE LOCATION
6 EDITH STREET, KINGSWOOD NSW 2747

FIGURE 2 – SITE LAYOUT

6 EDITH STREET, KINGSWOOD NSW 2747

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Area of Observed Fill

FIGURE 3 – AREAS OF OBSERVED FILL
6 EDITH STREET, KINGSWOOD NSW 2747

APPENDIX A

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Soil sampling location

FIGURE 4 – SAMPLE LOCATIONS
6 EDITH STREET, KINGSWOOD NSW 2747

* NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013) – Schedule B1; Guideline on Investigation Levels for Soil and Groundwater.

– Table 7. Health screening levels for asbestos contamination in soil Residential A – with garden/accessible soil.

FIGURE 5 – ASSESSMENT CRITERIA EXCEEDANCES
6 EDITH STREET, KINGSWOOD NSW 2747

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Appendix B – Results Summary Tables

Chemical Summary Table

		Analyte Name	Benzene	Toluene	Ethylbenzene	m/p-xylene	o-xylene	Naphthalene	Total Xylenes	Total BTEX	Benzene (F0)	TRH C6-C9	TRH C6-C10	TRH C6-C10 minus BTEX (F1)	TRH C10-C14	TRH C15-C28	TRH C29-C36	TRH C37-C40	TRH >C10-C16	TRH >C10-C16 - Naphthalene (F2)	TRH >C16-C34 (F3)	TRH >C34-C40 (F4)	TRH C10-C36 Total
Assessment Criteria *	NEPM 2013	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1	Table 1A(1)																						
2	Table 1A(3)		0.7	480	55			5	110					50						280			
3	Table 1B(5)																						
4	Table 1B(6)		65	105	125				45					180						120	1300	5600	
Sample Name	**Sample ID**	**Sample Date**	**Matrix**	**Reporting Limit**	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	45	45	100	25	25	90	120	110
SE197563.001	S1	10-9-2019	Soil	**Result**	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	**57**	**46**	100	25	25	90	120	110
SE197563.002	S2	10-9-2019	Soil	**Result**	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	**51**	**71**	100	25	25	**100**	120	**120**
SE197563.003	S3	10-9-2019	Soil	**Result**	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	**55**	45	100	25	25	90	120	110
SE202652.001	BH4	10-2-2020	Soil	**Result**	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	45	45	100	25	25	90	120	110
SE202652.002	BH5	10-2-2020	Soil	**Result**	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	45	45	100	25	25	90	120	110
SE202652.003	BH6	10-2-2020	Soil	**Result**	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	45	45	100	25	25	90	120	110
SE207037.001	G1	2-6-2020	Soil	**Result**	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	45	**54**	100	25	25	90	120	110
SE207037.002	G2	2-6-2020	Soil	**Result**	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	**51**	**71**	100	25	25	**91**	120	**120**
SE207037.003	F1	2-6-2020	Soil	**Result**	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	**470**	**630**	**180**	25	25	**920**	**360**	**1100**
SE207037.004	F2	2-6-2020	Soil	**Result**	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	45	45	100	25	25	90	120	110
SE207037.005	F3	2-6-2020	Soil	**Result**	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	45	45	100	25	25	90	120	110
				Count	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
				Maximum	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	470	630	180	25	25	920	360	1100
				Minimum	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	45	45	100	25	25	90	120	110
				Mean	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	87	229	107	25	25	166	142	202
				SD	–	–	–	–	–	–	–	–	–	–	–	–	–	127.2	174.8	24.1	–	–	249.9	72.4	297.9
				95% UCL	–	–	–	–	–	–	–	–	–	–	–	–	–	253.9	333.6	120.5	–	–	494.9	181.4	593.4

*** NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013) – Schedule B1; Guideline on Investigation Levels for Soil and Groundwater.**	
1	Table 1A(1) Health investigation levels (HILs) for soil contaminants - Residential A – Residential with garden/accessible soil.
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3	Table 1B(5) Generic EILs for aged As, fresh DDT and fresh naphthalene in soils Urban residential and public open space;
4	Table 1B(6) ESLs for TPH fractions F1-F4, BTEX and benzo(a)pyrene Urban residential and public open space - Fine Soils

Chemical Summary Table

		Analyte Name	TRH C10-C40 Total (F bands)	Naphthalene	2-methylnaphthalene	1-methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenzo(ah)anthracene	Benzo(ghi)perylene	Carcinogenic PAHs, BaP TEQ <LOR=0	Carcinogenic PAHs, BaP TEQ <LOR=LOR
Assessment Criteria *	NEPM 2013	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	TEQ (mg/kg)	TEQ (mg/kg)
1	Table 1A(1)																						3
2	Table 1A(3)			5																			
3	Table 1B(5)			10																			
4	Table 1B(6)																	0.7					
Sample Name	Sample ID	Sample Date	Matrix	Reporting Limit	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
SE197563.001	S1	10-9-2019	Soil	Result	210	0.1	0.1	0.1	0.1	0.1	0.1	**0.1**	0.1	**0.2**	**0.2**	0.1	0.1	**0.1**	0.1	**0.1**	**0.1**	0.1	**0.1**	0.2	0.3
SE197563.002	S2	10-9-2019	Soil	Result	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.3**	**0.4**	**0.4**	0.1	**0.4**	**0.6**	**0.7**
SE197563.003	S3	10-9-2019	Soil	Result	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
SE202652.001	BH4	10-2-2020	Soil	Result	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
SE202652.002	BH5	10-2-2020	Soil	Result	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
SE202652.003	BH6	10-2-2020	Soil	Result	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
SE207037.001	G1	2-6-2020	Soil	Result	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
SE207037.002	G2	2-6-2020	Soil	Result	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
SE207037.003	F1	2-6-2020	Soil	Result	**1300**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
SE207037.004	F2	2-6-2020	Soil	Result	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
SE207037.005	F3	2-6-2020	Soil	Result	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
		Count	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
		Maximum	1300	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.4	0.1	0.4	0.6	0.7
		Minimum	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
		Mean	309	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
		SD	328.6	_	_	_	_	_	_	0.1	_	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	_	0.09	0.12	0.12
		95% UCL	741	_	_	_	_	_	_	_	_	0.163	0.163	0.151	0.151	0.177	0.151	0.177	0.177	_	0.177	0.302	0.402

*** NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013) – Schedule B1; Guideline on Investigation Levels for Soil and Groundwater.**

1	Table 1A(1) Health investigation levels (HILs) for soil contaminants - Residential A – Residential with garden/accessible soil.
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Chemical Summary Table

		Analyte Name	Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	Total PAH (18)	Total PAH (NEPM/WHO 16)	Phenol	2-methyl phenol (o-cresol)	3/4-methyl phenol (m/p-cresol)	Total Cresol	2-chlorophenol	2,4-dimethylphenol	2,6-dichlorophenol	2,4-dichlorophenol	2,4,6-trichlorophenol	2-nitrophenol	4-nitrophenol	2,4,5-trichlorophenol	2,3,4,6/2,3,5,6-tetrachlorophenol	Pentachlorophenol	2,4-dinitrophenol	4-chloro-3-methylphenol	Hexachlorobenzene (HCB)	Alpha BHC
Assessment Criteria *	NEPM 2013	Units	TEQ (mg/kg)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1	Table 1A(1)				300	3000			400										100			10	
2	Table 1A(3)																							
3	Table 1B(5)																							
4	Table 1B(6)																							
Sample Name	Sample ID	Sample Date	Matrix	Reporting Limit	0.2	0.8	0.8	0.5	0.5	1	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	2	2	0.1	0.1
SE197563.001	S1	10-9-2019	Soil	Result	0.2	0.8	0.8	0.5	0.5	1	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	2	2	0.1	0.1
SE197563.002	S2	10-9-2019	Soil	Result	**0.6**	**3.0**	**3.0**	0.5	0.5	1	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	2	2	0.1	0.1
SE197563.003	S3	10-9-2019	Soil	Result	0.2	0.8	0.8	0.5	0.5	1	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	2	2	0.1	0.1
SE202652.001	BH4	10-2-2020	Soil	Result	0.2	0.8	0.8	0.5	0.5	1	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	2	2	0.1	0.1
SE202652.002	BH5	10-2-2020	Soil	Result	0.2	0.8	0.8	0.5	0.5	1	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	2	2	0.1	0.1
SE202652.003	BH6	10-2-2020	Soil	Result	0.2	0.8	0.8	0.5	0.5	1	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	2	2	0.1	0.1
SE207037.001	G1	2-6-2020	Soil	Result	0.2	0.8	0.8	0.5	0.5	1	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	2	2	0.1	0.1
SE207037.002	G2	2-6-2020	Soil	Result	0.2	0.8	0.8	0.5	0.5	1	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	2	2	0.1	0.1
SE207037.003	F1	2-6-2020	Soil	Result	0.2	0.8	0.8	0.5	0.5	1	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	2	2	0.1	0.1
SE207037.004	F2	2-6-2020	Soil	Result	0.2	0.8	0.8	0.5	0.5	1	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	2	2	0.1	0.1
SE207037.005	F3	2-6-2020	Soil	Result	0.2	0.8	0.8	0.5	0.5	1	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	2	2	0.1	0.1
				Count	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
				Maximum	0.6	3.0	3.0	0.5	0.5	1.0	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	0.5	1.0	0.5	2.0	2.0	0.1	0.1
				Minimum	0.2	0.8	0.8	0.5	0.5	1.0	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	0.5	1.0	0.5	2.0	2.0	0.1	0.1
				Mean	0.2	1.0	1.0	0.5	0.5	1.0	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	0.5	1.0	0.5	2.0	2.0	0.1	0.1
				SD	0.12	0.66	0.66	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
				95% UCL	0.302	1.362	1.362	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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1	Table 1A(1) Health investigation levels (HILs) for soil contaminants - Residential A – Residential with garden/accessible soil.
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Chemical Summary Table

		Analyte Name	Lindane	Heptachlor	Aldrin	Beta BHC	Delta BHC	Heptachlor epoxide	o,p'-DDE	Alpha Endosulfan	Gamma Chlordane	Alpha Chlordane	trans-Nonachlor	p,p'-DDE	Dieldrin	Endrin	o,p'-DDD	o,p'-DDT	Beta Endosulfan	p,p'-DDD	p,p'-DDT	Endosulfan sulphate	Endrin Aldehyde
Assessment Criteria *	NEPM 2013	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1	Table 1A(1)			6	3					135	25	25			3	10	60	60	135	60	60		
2	Table 1A(3)																						
3	Table 1B(5)																	1.5			1.5		
4	Table 1B(6)																						
Sample Name	**Sample ID**	**Sample Date**	**Matrix**	**Reporting Limit**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
SE197563.001	S1	10-9-2019	Soil	**Result**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
SE197563.002	S2	10-9-2019	Soil	**Result**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
SE197563.003	S3	10-9-2019	Soil	**Result**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
SE202652.001	BH4	10-2-2020	Soil	**Result**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
SE202652.002	BH5	10-2-2020	Soil	**Result**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
SE202652.003	BH6	10-2-2020	Soil	**Result**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
SE207037.001	G1	2-6-2020	Soil	**Result**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
SE207037.002	G2	2-6-2020	Soil	**Result**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
SE207037.003	F1	2-6-2020	Soil	**Result**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
SE207037.004	F2	2-6-2020	Soil	**Result**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
SE207037.005	F3	2-6-2020	Soil	**Result**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
		Count	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
		Maximum	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
		Minimum	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
		Mean	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
		SD	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		95% UCL	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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Chemical Summary Table

		Analyte Name	Methoxychlor	Endrin Ketone	Isodrin	Mirex	Total CLP OC Pesticides	Dichlorvos	Dimethoate	Diazinon (Dimpylate)	Fenitrothion	Malathion	Chlorpyrifos (Chlorpyrifos Ethyl)	Parathion-ethyl (Parathion)	Bromophos Ethyl	Methidathion	Ethion	Azinphos-methyl (Guthion)	Total OP Pesticides	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242
Assessment Criteria *	NEPM 2013	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1	Table 1A(1)		300			10																	
2	Table 1A(3)																						
3	Table 1B(5)																						
4	Table 1B(6)																						
Sample Name	Sample ID	Sample Date	Matrix	Reporting Limit	0.1	0.1	0.1	0.1	1	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
SE197563.001	S1	10-9-2019	Soil	Result	0.1	0.1	0.1	0.1	1	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
SE197563.002	S2	10-9-2019	Soil	Result	0.1	0.1	0.1	0.1	1	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
SE197563.003	S3	10-9-2019	Soil	Result	0.1	0.1	0.1	0.1	1	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
SE202652.001	BH4	10-2-2020	Soil	Result	0.1	0.1	0.1	0.1	1	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
SE202652.002	BH5	10-2-2020	Soil	Result	0.1	0.1	0.1	0.1	1	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
SE202652.003	BH6	10-2-2020	Soil	Result	0.1	0.1	0.1	0.1	1	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
SE207037.001	G1	2-6-2020	Soil	Result	0.1	0.1	0.1	0.1	1	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
SE207037.002	G2	2-6-2020	Soil	Result	0.1	0.1	0.1	0.1	1	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
SE207037.003	F1	2-6-2020	Soil	Result	0.1	0.1	0.1	0.1	1	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
SE207037.004	F2	2-6-2020	Soil	Result	0.1	0.1	0.1	0.1	1	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
SE207037.005	F3	2-6-2020	Soil	Result	0.1	0.1	0.1	0.1	1	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
				Count	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
				Maximum	0.1	0.1	0.1	0.1	1.0	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
				Minimum	0.1	0.1	0.1	0.1	1.0	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
				Mean	0.1	0.1	0.1	0.1	1.0	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2
				SD	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
				95% UCL	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

*** NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013) – Schedule B1; Guideline on Investigation Levels for Soil and Groundwater.**

1	Table 1A(1) Health investigation levels (HILs) for soil contaminants - Residential A – Residential with garden/accessible soil.
2	Table 1A(3) Soil Health Screening Levels (HSLs) for vapour intrusion -HSL A & HSL B; Low – high density residential: Clay - 0 m to <1 m.
3	Table 1B(5) Generic EILs for aged As, fresh DDT and fresh naphthalene in soils Urban residential and public open space;
4	Table 1B(6) ESLs for TPH fractions F1-F4, BTEX and benzo(a)pyrene Urban residential and public open space - Fine Soils

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Chemical Summary Table

		Analyte Name	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1262	Arochlor 1268	Total PCBs (Arochlors)	Arsenic, As	Cadmium, Cd	Chromium, Cr	Copper, Cu	Lead, Pb	Nickel, Ni	Zinc, Zn	Mercury
Assessment Criteria *	NEPM 2013	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1	Table 1A(1)							1	100	20	100	6000	300	400	7400	40
2	Table 1A(3)															
3	Table 1B(5)								40							
4	Table 1B(6)															
Sample Name	Sample ID	Sample Date	Matrix	Reporting Limit	0.2	0.2	0.2	0.2	0.2	1	1	0.3	0.5	0.5	1	0.5	2	0.05
SE197563.001	S1	10-9-2019	Soil	**Result**	0.2	0.2	0.2	0.2	0.2	1	**8**	**0.4**	**19**	**68**	**120**	**13**	**330**	**0.38**
SE197563.002	S2	10-9-2019	Soil	**Result**	0.2	0.2	0.2	0.2	0.2	1	**7**	0.3	**16**	**56**	**96**	**10**	**220**	**0.21**
SE197563.003	S3	10-9-2019	Soil	**Result**	0.2	0.2	0.2	0.2	0.2	1	**7**	0.3	**16**	**98**	**89**	**10**	**240**	**0.24**
SE202652.001	BH4	10-2-2020	Soil	**Result**	0.2	0.2	0.2	0.2	0.2	1	**2**	0.3	**4.3**	**3.4**	**6**	**3.0**	**21**	0.05
SE202652.002	BH5	10-2-2020	Soil	**Result**	0.2	0.2	0.2	0.2	0.2	1	**5**	0.3	**17**	**12**	**19**	**6.9**	**23**	0.05
SE202652.003	BH6	10-2-2020	Soil	**Result**	0.2	0.2	0.2	0.2	0.2	1	**6**	**0.4**	**12**	**15**	**20**	**8.0**	**59**	0.05
SE207037.001	G1	2-6-2020	Soil	**Result**	0.2	0.2	0.2	0.2	0.2	1	**3**	0.3	**6.1**	**13**	**16**	**3.1**	**70**	0.05
SE207037.002	G2	2-6-2020	Soil	**Result**	0.2	0.2	0.2	0.2	0.2	1	**2**	0.3	**4.7**	**10**	**13**	**2.3**	**56**	0.05
SE207037.003	F1	2-6-2020	Soil	**Result**	0.2	0.2	0.2	0.2	0.2	1	**3**	0.3	**17**	**14**	**20**	**9.8**	**59**	0.05
SE207037.004	F2	2-6-2020	Soil	**Result**	0.2	0.2	0.2	0.2	0.2	1	**5**	0.3	**15**	**94**	**11**	**45**	**61**	0.05
SE207037.005	F3	2-6-2020	Soil	**Result**	0.2	0.2	0.2	0.2	0.2	1	**1**	0.3	**20**	**40**	**6**	**68**	**48**	0.05
				Count	11	11	11	11	11	11	11	11	11	11	11	11	11	11
				Maximum	0.2	0.2	0.2	0.2	0.2	1.0	8.0	0.4	20.0	98.0	120.0	68.0	330.0	0.38
				Minimum	0.2	0.2	0.2	0.2	0.2	1.0	1.0	0.3	4.3	3.4	6.0	2.3	21.0	0.05
				Mean	0.2	0.2	0.2	0.2	0.2	1.0	4.5	0.3	13.4	38.5	37.8	16.3	107.9	0.11
				SD	_	_	_	_	_	_	2.3817	0.0405	5.7503	35.14	41.933	20.817	104.31	0.1134
				95% UCL	_	_	_	_	_	_	5.756	0.34	16.52	77.85	92.93	43.64	247.1	0.261

*** NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013) – Schedule B1; Guideline on Investigation Levels for Soil and Groundwater.**

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ENVIRONMENTAL HAZMAT OCCUPATIONAL

Asbestos Summary Table

				Analyte Name	Asbestos Detected	Estimated Fibres	Total Sample Weight	ACM in >7mm Sample	AF/FA in >2mm to <7mm Sample	AF/FA in <2mm Sample	Asbestos in soil (>7mm ACM)	Asbestos in soil (>2mm to <7mm AF/FA)	Asbestos in soil (<2mm AF/FA)	Asbestos in soil (<7mm AF/FA)
				Units	No unit	%w/w	g	g	g	g	%w/w	%w/w	%w/w	%w/w
NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013) – Schedule B1; Guideline on Investigation Levels for Soil and Groundwater. Table 7. Health screening levels for asbestos contamination in soil o Residential A – with garden/accessible soil.											0.001	0.001	0.001	0.001
Sample Name	**EHO - ID**	**Sample Date**	**Matrix**	**Reporting Limit**	_	0.01	1	0.01	0.0001	0.0001	0.01	0.001	0.001	0.001
SE197563.001	S1	10-9-2019	Soil	**Result**	Yes	<0.01	**850**	<0.01	**0.0117**	<0.0001	<0.01	**0.001**	<0.001	**0.001**
SE197563.002	S2	10-9-2019	Soil	**Result**	No	<0.01	**818**	<0.01	<0.0001	<0.0001	<0.01	<0.001	<0.001	<0.001
SE197563.003	S3	10-9-2019	Soil	**Result**	Yes	<0.01	**916**	<0.01	**0.0226**	<0.0001	<0.01	**0.002**	<0.001	**0.002**
SE202652.001	BH4	10-2-2020	Soil	**Result**	No	<0.01	**323**	<0.01	<0.0001	<0.0001	<0.01	<0.001	<0.001	<0.001
SE202652.002	BH5	10-2-2020	Soil	**Result**	No	<0.01	**424**	<0.01	<0.0001	<0.0001	<0.01	<0.001	<0.001	<0.001
SE202652.003	BH6	10-2-2020	Soil	**Result**	No	<0.01	**511**	<0.01	<0.0001	<0.0001	<0.01	<0.001	<0.001	<0.001
SE207037.006	G1A	2-6-2020	Soil	**Result**	No	<0.01	_	_	_	_	_	_	_	_
SE207037.007	G2A	2-6-2020	Soil	**Result**	No	<0.01	_	_	_	_	_	_	_	_
SE207037.008	F1A	2-6-2020	Soil	**Result**	No	<0.01	_	_	_	_	_	_	_	_
SE207037.009	F2A	2-6-2020	Soil	**Result**	No	<0.01	_	_	_	_	_	_	_	_
SE207037.010	F3A	2-6-2020	Soil	**Result**	No	<0.01	_	_	_	_	_	_	_	_

Duplicate Analysis Table

Sample Name	EHO ID	Sample Date	Matrix	Analyte Name	Benzene	Toluene	Ethylbenzene	m/p-xylene	o-xylene	Naphthalene	Total Xylenes	Total BTEX	Benzene (F0)	TRH C6-C9	TRH C6-C10	TRH C6-C10 minus BTEX (F1)	TRH C10-C14	TRH C15-C28	TRH C29-C36	TRH C37-C40	TRH >C10-C16	TRH >C10-C16 - Naphthalene (F2)	TRH >C16-C34 (F3)	TRH >C34-C40 (F4)	TRH C10-C36 Total	TRH >C10-C40 Total (F bands)	Naphthalene	2-methylnaphthalene	1-methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene
				Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Reporting Limit	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	45	45	100	25	25	90	120	110	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SE202652.001	BH4	10-2-2020	Soil	Result	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.3	<0.6	<0.1	<20	<25	<25	<20	<45	<45	<100	<25	<25	<90	<120	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SE202652.004	DUPLICATE	10-2-2020	Soil	Result	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.3	<0.6	<0.1	<20	<25	<25	<20	<45	<45	<100	<25	<25	<90	<120	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				RPD (%)	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_

Sample Name	EHO ID	Sample Date	Matrix	Analyte Name	Benzene	Toluene	Ethylbenzene	m/p-xylene	o-xylene	Naphthalene	Total Xylenes	Total BTEX	Benzene (F0)	TRH C6-C9	TRH C6-C10	TRH C6-C10 minus BTEX (F1)	TRH C10-C14	TRH C15-C28	TRH C29-C36	TRH C37-C40	TRH >C10-C16	TRH >C10-C16 - Naphthalene (F2)	TRH >C16-C34 (F3)	TRH >C34-C40 (F4)	TRH C10-C36 Total	TRH >C10-C40 Total (F bands)	Naphthalene	2-methylnaphthalene	1-methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene
				Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Reporting Limit	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.6	0.1	20	25	25	20	45	45	100	25	25	90	120	110	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SE207037.003	F1	43984	Soil	Result	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.3	<0.6	<0.1	<20	<25	<25	<20	**470**	**630**	**180**	<25	<25	**920**	**360**	**1100**	**1300**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SE207037.013	D3	43984	Soil	Result	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.3	<0.6	<0.1	<20	<25	<25	<20	**520**	**680**	**210**	<25	<25	**1000**	**400**	**1200**	**1400**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				RPD (%)	_	_	_	_	_	_	_	_	_	_	_	_	_	10.10	7.63	15.38	_	_	8.33	10.53	8.70	7.41	_	_	_	_	_	_	_	_

Duplicate Analysis Table

Sample Name	EHO ID	Sample Date	Matrix	Analyte Name	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenzo(ah)anthracene	Benzo(ghi)perylene	Carcinogenic PAHs, BaP TEQ <LOR=0	Carcinogenic PAHs, BaP TEQ <LOR=LOR	Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	Total PAH (18)	Total PAH (NEPM/WHO 16)	Phenol	2-methyl phenol (o-cresol)	3/4-methyl phenol (m/p-cresol)	Total Cresol	2-chlorophenol	2,4-dimethylphenol	2,6-dichlorophenol	2,4-dichlorophenol	2,4,6-trichlorophenol	2-nitrophenol	4-nitrophenol	2,4,5-trichlorophenol	2,3,4,6/2,3,5,6-tetrachlorophenol	Pentachlorophenol	2,4-dinitrophenol	4-chloro-3-methylphenol
				Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Reporting Limit	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.8	0.8	0.5	0.5	1	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	2	2
SE202652.001	BH4	10-2-2020	Soil	Result	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.8	<0.5	<0.5	<1	<1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<2	<2
SE202652.004	DUPLICATE	10-2-2020	Soil	Result	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.8	<0.5	<0.5	<1	<1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<2	<2
				RPD (%)	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_

Sample Name	EHO ID	Sample Date	Matrix	Analyte Name	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenzo(ah)anthracene	Benzo(ghi)perylene	Carcinogenic PAHs, BaP TEQ <LOR=0	Carcinogenic PAHs, BaP TEQ <LOR=LOR	Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	Total PAH (18)	Total PAH (NEPM/WHO 16)	Phenol	2-methyl phenol (o-cresol)	3/4-methyl phenol (m/p-cresol)	Total Cresol	2-chlorophenol	2,4-dimethylphenol	2,6-dichlorophenol	2,4-dichlorophenol	2,4,6-trichlorophenol	2-nitrophenol	4-nitrophenol	2,4,5-trichlorophenol	2,3,4,6/2,3,5,6-tetrachlorophenol	Pentachlorophenol	2,4-dinitrophenol	4-chloro-3-methylphenol
				Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Reporting Limit	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.8	0.8	0.5	0.5	1	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	2	2
SE207037.003	F1	43984	Soil	Result	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.8	<0.5	<0.5	<1	<1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<2	<2
SE207037.013	D3	43984	Soil	Result	<0.1	**0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.8	<0.5	<0.5	<1	<1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<2	<2
				RPD (%)	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_

Duplicate Analysis Table

Sample Name	EHO ID	Sample Date	Matrix	Analyte Name	Hexachlorobenzene (HCB)	Alpha BHC	Lindane	Heptachlor	Aldrin	Beta BHC	Delta BHC	Heptachlor epoxide	o,p'-DDE	Alpha Endosulfan	Gamma Chlordane	Alpha Chlordane	trans-Nonachlor	p,p'-DDE	Dieldrin	Endrin	o,p'-DDD	o,p'-DDT	Beta Endosulfan	p,p'-DDD	p,p'-DDT	Endosulfan sulphate	Endrin Aldehyde	Methoxychlor	Endrin Ketone	Isodrin	Mirex	Total CLP OC Pesticides	Dichlorvos	Dimethoate	Diazinon (Dimpylate)
				Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Reporting Limit	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	0.5	0.5	0.5
SE202652.001	BH4	10-2-2020	Soil	Result	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.5	<0.5	<0.5
SE202652.004	DUPLICATE	10-2-2020	Soil	Result	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.5	<0.5	<0.5
				RPD (%)	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_

Sample Name	EHO ID	Sample Date	Matrix	Analyte Name	Hexachlorobenzene (HCB)	Alpha BHC	Lindane	Heptachlor	Aldrin	Beta BHC	Delta BHC	Heptachlor epoxide	o,p'-DDE	Alpha Endosulfan	Gamma Chlordane	Alpha Chlordane	trans-Nonachlor	p,p'-DDE	Dieldrin	Endrin	o,p'-DDD	o,p'-DDT	Beta Endosulfan	p,p'-DDD	p,p'-DDT	Endosulfan sulphate	Endrin Aldehyde	Methoxychlor	Endrin Ketone	Isodrin	Mirex	Total CLP OC Pesticides	Dichlorvos	Dimethoate	Diazinon (Dimpylate)
				Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Reporting Limit	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.7	0.5	0.5	0.5
SE207037.003	F1	43984	Soil	Result	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.7	<0.5	<0.5	<0.5
SE207037.013	D3	43984	Soil	Result	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.7	<0.5	<0.5	<0.5
				RPD (%)	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_

Duplicate Analysis Table

Sample Name	EHO ID	Sample Date	Matrix	Analyte Name	Fenitrothion	Malathion	Chlorpyrifos (Chlorpyrifos Ethyl)	Parathion-ethyl (Parathion)	Bromophos Ethyl	Methidathion	Ethion	Azinphos-methyl (Guthion)	Total OP Pesticides	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1262	Arochlor 1268	Total PCBs (Arochlors)	Arsenic, As	Cadmium, Cd	Chromium, Cr	Copper, Cu	Lead, Pb	Nickel, Ni	Zinc, Zn	Mercury
				Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Reporting Limit	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1	1	0.3	0.5	0.5	1	0.5	2	0.05
SE202652.001	BH4	10-2-2020	Soil	Result	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<1.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	**2**	<0.3	**4.3**	**3.4**	**6**	**3.0**	**21**	<0.05
SE202652.004	DUPLICATE	10-2-2020	Soil	Result	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<1.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	**2**	<0.3	**4.0**	**3.1**	**6**	**3.0**	**21**	<0.05
				RPD (%)	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	0	_	7.23	9.23	0	0	0	_

Sample Name	EHO ID	Sample Date	Matrix	Analyte Name	Fenitrothion	Malathion	Chlorpyrifos (Chlorpyrifos Ethyl)	Parathion-ethyl (Parathion)	Bromophos Ethyl	Methidathion	Ethion	Azinphos-methyl (Guthion)	Total OP Pesticides	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1262	Arochlor 1268	Total PCBs (Arochlors)	Arsenic, As	Cadmium, Cd	Chromium, Cr	Copper, Cu	Lead, Pb	Nickel, Ni	Zinc, Zn	Mercury
				Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Reporting Limit	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1	1	0.3	0.5	0.5	1	0.5	2	0.05
SE207037.003	F1	43984	Soil	Result	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<1.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	**2**	<0.3	**4.7**	**10**	**13**	**2.3**	**56**	<0.05
SE207037.013	D3	43984	Soil	Result	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<1.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	**3**	<0.3	**24**	**16**	**20**	**16**	**71**	<0.05
				RPD (%)	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	0	_	134.5	46.15	42.42	149.73	23.62	_

Trip Blank Detections

Sample Name	Description	Sample Date	Matrix	Analyte Name	Benzene	Toluene	Ethylbenzene	m/p-xylene	o-xylene	Naphthalene	Total Xylenes	Total BTEX	Benzene (F0)	TRH C6-C9	TRH C6-C10	TRH C6-C10 minus BTEX (F1)	TRH C10-C14	TRH C15-C28	TRH C29-C36	TRH C37-C40	TRH >C10-C16	TRH >C10-C16 - Naphthalene (F2	TRH >C16-C34 (F3)	TRH >C34-C40 (F4)	TRH C10-C36 Total	TRH >C10-C40 Total (F bands)
				Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SE207037.012	Trip Blank	2-6-2020	Soil	Result	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.3	<0.6	<0.1	<20	<25	<25	<20	<45	<45	<100	<25	<25	<90	<120	<110	<210

Trip Spike Recovery

				Analyte Name	Benzene	Toluene	Ethylbenzene	m/p-xylene	o-xylene
				Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SE207037.011	Trip Spike	2-6-2020	Soil	Result	[111%]	[107%]	[102%]	[103%]	[103%]

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Appendix C – Bore Logs

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SOIL BORE LOG

Job No: JN00869 **Date:** 10.9.19 **Logged By: CW**

Client: Liquid Gold 888 Pty Ltd **Advance Method: Power auger**

Location: 6 Edith Street, Kingswood NSW

Bore Identification: **Bore 1** **Coordinates:**

Depth (mbgl)	Water Observed (mbgl)	Sample Information			Material Type	Material Description
		PID (ppm)	ID & Depth	Duplicate		
- 0.0 - - - 0.39 - - 0.43 - - - - - - - - -	No water observed	0.0	S1 0.1-0.3		SM CL	Grass (approx. 50mm thick over) FILL - Silty SAND with grass roots, some gravel and occasional tile fragments, dry, loose, low plasticity, grey Natural - Silty Sandy CLAY/Clayey SILT, dry, compact, low – medium plasticity, grey mottled orange/brown, remnants of roots

Bore Terminated at 0.43 mbgl. Refusal? –

Bore Identification: **Bore 2** **Coordinates**

Depth (mbgl)	Water Observed (mbgl)	Sample Information			Material Type	Material Description
		PID (ppm)	ID & Depth	Duplicate		
- 0.0 - - 0.25 - 0.3 - - - - - - - - - - -	No water observed	0.0	S1 0.1-0.3		SM CL	Grass (approx. 50mm thick over) FILL - Silty SAND with grass roots, some gravel and occasional tile fragments, dry, loose, low plasticity, grey Natural - Silty Sandy CLAY/Clayey SILT, dry, compact, low – medium plasticity, grey mottled orange/brown, remnants of roots

Bore Terminated at 0.3 mbgl. Refusal? -

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SOIL BORE LOG

Job No: JN00869 **Date:** 10.9.19 **Logged By: CW**

Client: Liquid Gold 888 Pty Ltd **Advance Method: Power auger**

Location: 6 Edith Street, Kingswood NSW

Bore Identification: **Bore 3** **Coordinates:**

Depth (mbgl)	Water Observed (mbgl)	Sample Information			Material Type	Material Description
		PID (ppm)	ID & Depth	Duplicate		
- 0.0 - - - 0.29 - 0.34 - - - - - - - - -	No water observed	0.0	S3 0.1-0.25		SM CL	Grass (approx. 50mm thick over) FILL - Silty SAND/Sandy SILT, some gravel, tile fragments, and grass roots, dry, loose, low plasticity (gravel to 10mm dia), grey Natural - Silty Sandy CLAY/Clayey SILT, dry, compact, low – medium plasticity, grey mottled orange/brown, rootlets

Bore Terminated at 0.34 mbgl. Refusal? –

Bore Identification: **Coordinates**

Depth (mbgl)	Water Observed (mbgl)	Sample Information			Material Type	Material Description
		PID (ppm)	ID & Depth	Duplicate		
- - - - - - - - - - - - - -						

Bore Terminated at mbgl. Refusal? -

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SOIL BORE LOG

Job No: JN00869 **Date:** 10.2.20 **Logged By: CW**

Client: Liquid Gold 888 Pty Ltd **Advance Method: Hand digging**

Location: 6 Edith Street, Kingswood NSW

Bore Identification: BH4 **Coordinates:** S 33.76500 / E 150.72504

Depth (mbgl)	Water Observed (mbgl)	Sample Information			Material Type	Material Description
		PID (ppm)	ID & Depth	Duplicate		
- 0.0 - - - 0.07 - - - - 0.21 - - - - - -	0.1		BH4 0.07-0.21	Duplicate 0.07-0.21	OH SM OL	Grass over Clayey Silty SAND / Sandy SILT with rootlets, (TOPSOIL), soft, low plasticity, saturated, dark brown FILL, Silty SAND, loose, non-plastic, saturated, brown Potential Natural, Sandy CLAY, soft, low to med plasticity, saturated, grey/ brown

Bore Terminated at 0.23 mbgl. Refusal? –

Bore Identification: BH5 **Coordinates:** S 33.76502 / E 150.72511

Depth (mbgl)	Water Observed (mbgl)	Sample Information			Material Type	Material Description
		PID (ppm)	ID & Depth	Duplicate		
- 0.0 - - 0.06 - - - - - - - - - - - -	0.2		BH5 0.06-0.23		OL OH	Grass over Clayey Silty SAND / Sandy SILT with rootlets, (TOPSOIL), soft, low plasticity, saturated, dark brown Natural Sandy CLAY, soft, low to med plasticity, saturated, grey/ brown mottled orange

Bore Terminated at 0.23 mbgl. Refusal? -

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SOIL BORE LOG

Job No: JN00869 **Date:** 10.2.20 **Logged By: CW**

Client: Liquid Gold 888 Pty Ltd **Advance Method: Hand digging**

Location: 6 Edith Street, Kingswood NSW

Bore Identification: BH6 **Coordinates: S** 33.76504 **/ E** 150.72511

Depth (mbgl)	Water Observed (mbgl)	Sample Information			Material Type	Material Description
		PID (ppm)	ID & Depth	Duplicate		
- 0.0 - - - 0.09 - - - - - - - - - -	Minimal water observed entering at base		BH6 0.0-0.09		OL OH	Grass over Clayey Silty SAND / Sandy SILT with rootlets, (TOPSOIL), soft, low plasticity, saturated, dark brown Service encountered 0.08 – 40mm white conduit Natural Sandy CLAY, soft, low to med plasticity, very most, grey/ brown mottled orange

Bore Terminated at 0.26 mbgl. Refusal? –

Bore Identification: **Coordinates** /

Depth (mbgl)	Water Observed (mbgl)	Sample Information			Material Type	Material Description
		PID (ppm)	ID & Depth	Duplicate		
- - - - - - - - - - - - - - -						

Bore Terminated at mbgl. Refusal? -

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SOIL BORE LOG

Job No: JN0869 **Date:** 2/6/2020 **Logged By: CW**

Client: Liquid Gold 888 Pty Ltd **Advance Method: Hand**

Location: 6 Edith St, Kingswood NSW

Bore Identification: G1 **Coordinates:** S33.76509/E150.72514

Depth (mbgl)	Water Observed (mbgl)	Sample Information			Material Type	Material Description
		PID (ppm)	ID & Depth	Duplicate		
-0.05 -0.1 - - - - -0.35 - - - - - - - -	No water observed	0	G1 0.1-0.2		SM CL	Grass – approx 50mm cover Silty SAND with wood chippings, bark and plant debris. Dry and loose. Silty CLAY, fine plant roots, dark brown to brown. Dry, medium plasticity.

Bore Terminated at 0.4 mbgl. Refusal? –

Bore Identification: G2 **Coordinates:** S33.76512/E150.72514

Depth (mbgl)	Water Observed (mbgl)	Sample Information			Material Type	Material Description
		PID (ppm)	ID & Depth	Duplicate		
-0.05 - - - -0.25 - - - - - - - - - -			G2 0.1-0.2		SM CL	Grass – approx 50mm cover Silty SAND with wood chippings, bark and plant debris. Dry and loose. Silty CLAY, fine plant roots, dark brown to brown. Dry, medium plasticity.

Bore Terminated at 0.3 mbgl. Refusal? -

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SOIL BORE LOG

Job No: JN0869 **Date:** 2/6/2020 **Logged By: CW**

Client: Liquid Gold 888 Pty Ltd **Advance Method: Hand**

Location: 6 Edith St, Kingswood NSW

Bore Identification: F1 **Coordinates:** S33.76498/E150.72511

Depth (mbgl)	Water Observed (mbgl)	Sample Information			Material Type	Material Description
		PID (ppm)	ID & Depth	Duplicate		
-0.02 -0.1 - -0.19 - - - - - - - - - - -	No water observed	0	F1 + D3 0.1-0.2		SM CL	Fine Gravel – approx. 20mm cover Compact sandy Gravel, semi-compact, low plasticity, brown. Geofabric at 0.1MBGL. Fill – Silty SAND, slightly moist, semi-compact, low plasticity Silty CLAY, fine plant roots, dark brown to brown. Dry, medium plasticity.

Bore Terminated at mbgl. Refusal? –

Bore Identification: F2 **Coordinates:** S33.76496/E150.72485

Depth (mbgl)	Water Observed (mbgl)	Sample Information			Material Type	Material Description
		PID (ppm)	ID & Depth	Duplicate		
-0.02 - -0.16 - - - - - - - - - - - -	No water observed	0	F2 0.1-0.2		SM CL	Coarse Gravel – approx. 20mm cover Compact sandy gravel, semi-compact, low plasticity, brown. Silty CLAY, fine plant roots, dark brown to brown. Dry, medium plasticity.

Bore Terminated at 0.18 mbgl. Refusal? -

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SOIL BORE LOG

Job No: JN0869 **Date:** 2/6/2020 **Logged By: CW**

Client: Liquid Gold 888 Pty Ltd **Advance Method: Hand**

Location: 6 Edith St, Kingswood NSW

Bore Identification: F3 **Coordinates:** S33.76493/E150.72484

Depth (mbgl)	Water Observed (mbgl)	Sample Information			Material Type	Material Description
		PID (ppm)	ID & Depth	Duplicate		
-0.05 - -0.15 - - - - - - - - - - - -	No water observed	0	F3 0.1-0.2			Woodchip – approx. 50mm Compact sandy Gravel, semi-compact, low plasticity, brown. Silty CLAY, fine plant roots, dark brown to brown. Dry, medium plasticity.

Bore Terminated at 0.2 mbgl. Refusal? –

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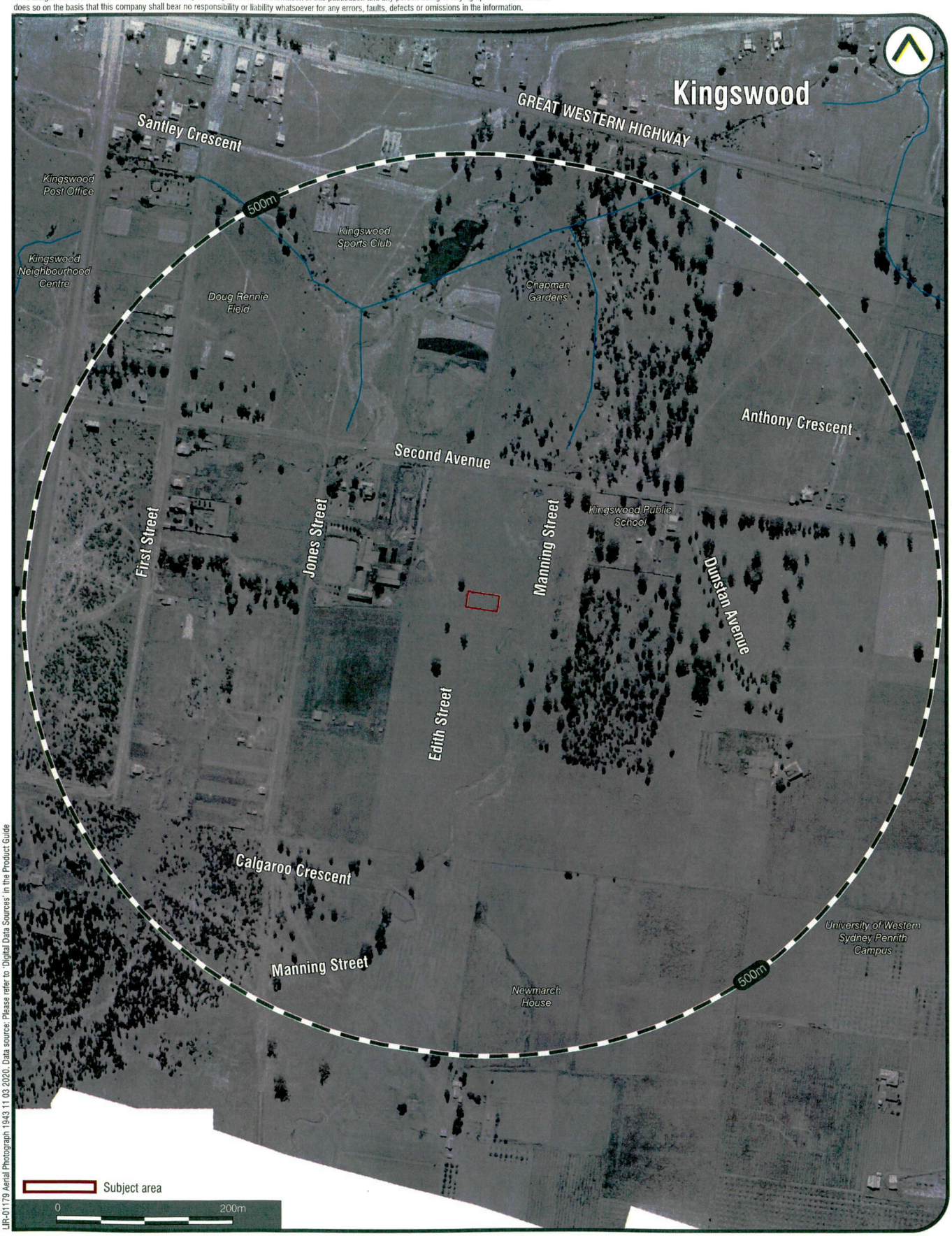
Appendix D – Historical Photographs



LIR-01179 Aerial Photograph 1943 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1943

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MAP 11

LIR-01179 Aerial Photograph 1965 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1965

LAND INSIGHT & RESOURCES

MAP 12

LIR-01179 Aerial Photograph 1970 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1970

LAND INSIGHT & RESOURCES

MAP 13

LR-01179 Aerial Photograph 1975 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1975

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MAP 14

LIR-01179 Aerial Photograph 1984 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1984

LAND INSIGHT & RESOURCES

MAP 15

LIR-01179 Aerial Photograph 1991 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1991

LAND INSIGHT & RESOURCES

MAP 16

LIR-01179 Aerial Photograph 1994 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1994

LAND INSIGHT & RESOURCES

MAP 17

LR-01179 Aerial Photograph 2002 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 2002

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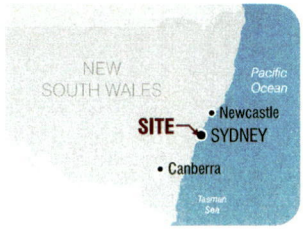
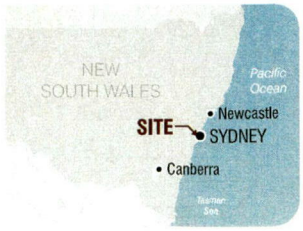


MAP 18

LIR-01179 Aerial Photograph 2005 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 2005

LAND INSIGHT & RESOURCES

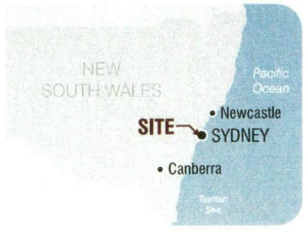


MAP 19

LIR-01179 Aerial Photograph 2008 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 2008

LAND INSIGHT & RESOURCES



MAP 20

LIR-011179 Aerial Photograph 2008 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 2009

LAND INSIGHT & RESOURCES

MAP 21

LIR-01179 Aerial Photograph 2012 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 2012

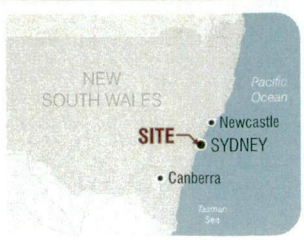
LAND INSIGHT & RESOURCES

MAP 22

LR-01179 Aerial Photograph 2015 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 2015

LAND INSIGHT & RESOURCES



MAP 23

LR-01179 Aerial Photograph 2017 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 2017

LAND INSIGHT & RESOURCES

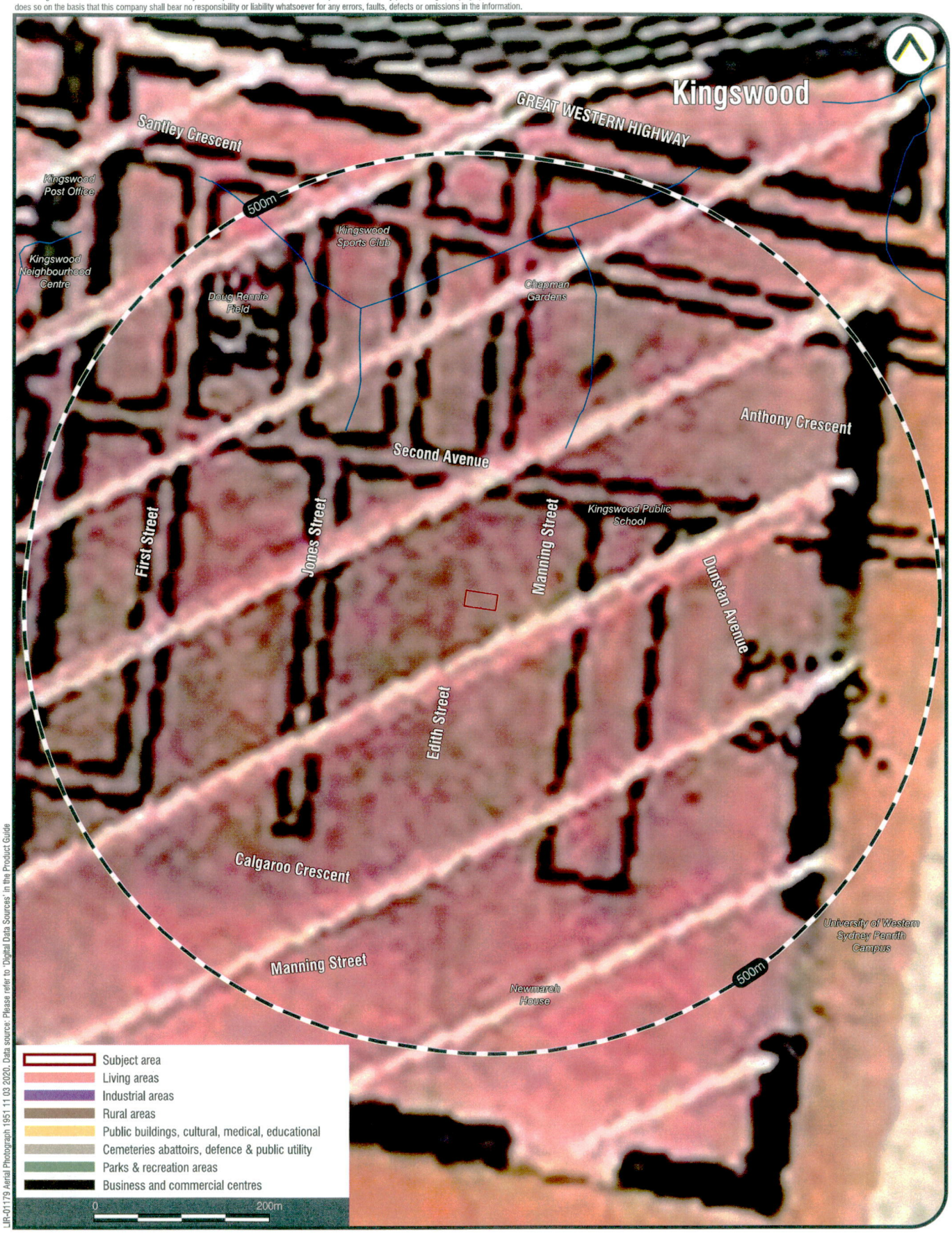
MAP 24

LIR-01179 Aerial Photograph 2019 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 2019

LAND INSIGHT & RESOURCES

MAP 25

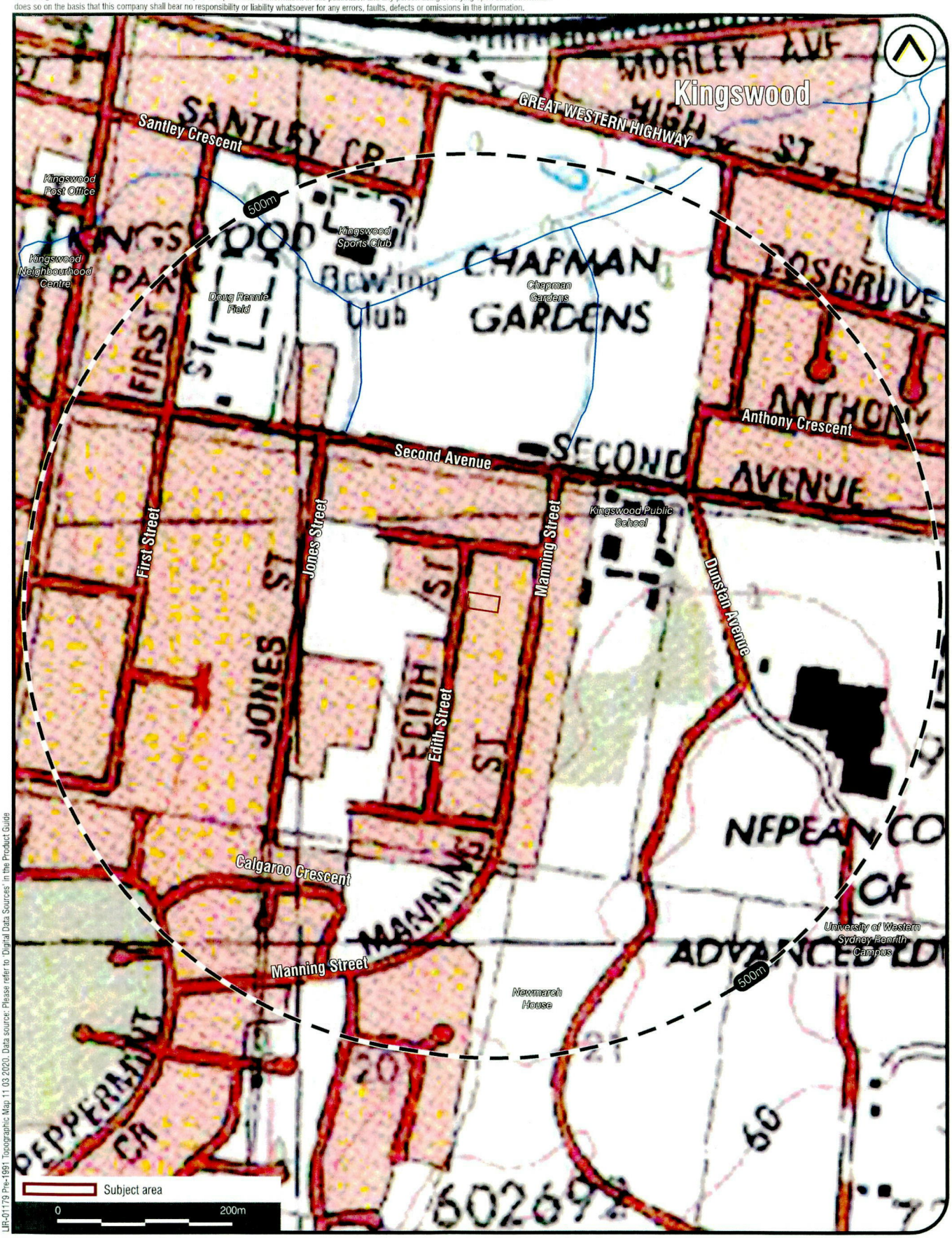


LIR-01179 Aerial Photograph 1951 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1951

LAND INSIGHT & RESOURCES

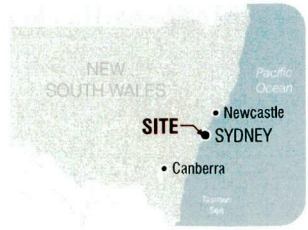
MAP 26



LIR-01179 Pre-1991 Topographic Map 11 03 2020. Data source: Please refer to 'Digital Data Sources' in the Product Guide

1969-1991 TOPOGRAPHIC MAP (PENRITH 9030-3N)

LAND INSIGHT & RESOURCES



MAP 27

EHO CONSULTING
ENVIRONMENTAL HAZMAT OCCUPATIONAL

Appendix E – Laboratory Certificates of Analysis

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Craig Wellings	Manager	Huong Crawford
Client	EHO CONSULTING PTY LIMITED	Laboratory	SGS Alexandria Environmental
Address	16/380 PENNANT HILLS ROAD PENNANT HILLS NSW 2120	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	(Not specified)	Telephone	+61 2 8594 0400
Facsimile	(Not specified)	Facsimile	+61 2 8594 0499
Email	craig@ehoc.com.au	Email	au.environmental.sydney@sgs.com
Project	**JN00869 - Kingswood**	SGS Reference	**SE197563 R0**
Order Number	(Not specified)	Date Received	12 Sep 2019
Samples	3	Date Reported	19 Sep 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.

Sample #1: Asbestos found in approx 4x2x1mm cement sheet fragments.
Sample #3: Asbestos found in approx 5x3x1mm cement sheet fragments.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

[redacted]

Akheeqar Beniameen
Chemist

Kamrul Ahsan
Senior Chemist

Ly Kim Ha
Organic Section Head

[redacted]

Yusuf Kuthpudin
Asbestos Analyst

Parameter	Units	LOR	Sample Number: SE197563.001 Sample Matrix: Soil Sample Date: 10 Sep 2019 Sample Name: S1	SE197563.002 Soil 10 Sep 2019 S2	SE197563.003 Soil 10 Sep 2019 S3
VOC's in Soil Method: AN433 Tested: 13/9/2019					
Monocyclic Aromatic Hydrocarbons					
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1
Polycyclic VOCs					
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
Surrogates					
d4-1,2-dichloroethane (Surrogate)	%	-	**97**	**103**	**96**
d8-toluene (Surrogate)	%	-	**130**	**129**	**130**
Bromofluorobenzene (Surrogate)	%	-	**105**	**104**	**103**
Totals					
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6
Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 13/9/2019					
TRH C6-C10	mg/kg	25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20
Surrogates					
d4-1,2-dichloroethane (Surrogate)	%	-	**97**	**103**	**96**
d8-toluene (Surrogate)	%	-	**130**	**129**	**130**
Bromofluorobenzene (Surrogate)	%	-	**105**	**104**	**103**
VPH F Bands					
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25

Parameter	Units	LOR	Sample Number: SE197563.001 Sample Matrix: Soil Sample Date: 10 Sep 2019 Sample Name: S1	SE197563.002 Soil 10 Sep 2019 S2	SE197563.003 Soil 10 Sep 2019 S3
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 13/9/2019					
TRH C10-C14	mg/kg	20	<20	<20	<20
TRH C15-C28	mg/kg	45	**57**	**51**	**55**
TRH C29-C36	mg/kg	45	**46**	**71**	<45
TRH C37-C40	mg/kg	100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110	<110	**120**	<110
TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210
TRH F Bands					
TRH >C10-C16	mg/kg	25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	**100**	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 13/9/2019					
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	**0.1**	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	**0.2**	**0.3**	<0.1
Pyrene	mg/kg	0.1	**0.2**	**0.3**	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	**0.3**	<0.1
Chrysene	mg/kg	0.1	<0.1	**0.3**	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	**0.1**	**0.4**	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	**0.3**	<0.1
Benzo(a)pyrene	mg/kg	0.1	**0.1**	**0.4**	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	**0.1**	**0.4**	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	**0.1**	**0.4**	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	**0.6**	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	**0.7**	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	**0.6**	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	**3.0**	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	**3.0**	<0.8
Surrogates					
d5-nitrobenzene (Surrogate)	%	-	**86**	**88**	**88**
2-fluorobiphenyl (Surrogate)	%	-	**84**	**86**	**84**
d14-p-terphenyl (Surrogate)	%	-	**88**	**88**	**86**
Speciated Phenols in Soil Method: AN420 Tested: 13/9/2019					
Phenol	mg/kg	0.5	<0.5	<0.5	<0.5
2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5	<0.5	<0.5
3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1	<1	<1
Total Cresol	mg/kg	1.5	<1.5	<1.5	<1.5
2-chlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5
2,4-dimethylphenol	mg/kg	0.5	<0.5	<0.5	<0.5
2,6-dichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5
2,4-dichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5
2,4,6-trichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5
2-nitrophenol	mg/kg	0.5	<0.5	<0.5	<0.5
4-nitrophenol	mg/kg	1	<1	<1	<1
2,4,5-trichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5
2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1	<1	<1
Pentachlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5
2,4-dinitrophenol	mg/kg	2	<2	<2	<2

Parameter	Units	LOR	Sample Number: SE197563.001 Sample Matrix: Soil Sample Date: 10 Sep 2019 Sample Name: S1	SE197563.002 Soil 10 Sep 2019 S2	SE197563.003 Soil 10 Sep 2019 S3
Speciated Phenols in Soil Method: AN420 Tested: 13/9/2019 (continued)					
4-chloro-3-methylphenol	mg/kg	2	<2	<2	<2
Surrogates					
2,4,6-Tribromophenol (Surrogate)	%	-	**91**	**92**	**96**
d5-phenol (Surrogate)	%	-	**102**	**102**	**102**
OC Pesticides in Soil Method: AN420 Tested: 13/9/2019					
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1
Surrogates					
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**73**	**73**	**70**
OP Pesticides in Soil Method: AN420 Tested: 13/9/2019					
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7

Parameter	Units	LOR	Sample Number: SE197563.001 Sample Matrix: Soil Sample Date: 10 Sep 2019 Sample Name: S1	SE197563.002 Soil 10 Sep 2019 S2	SE197563.003 Soil 10 Sep 2019 S3
OP Pesticides in Soil Method: AN420 Tested: 13/9/2019 (continued)					
Surrogates					
2-fluorobiphenyl (Surrogate)	%	-	84	86	84
d14-p-terphenyl (Surrogate)	%	-	88	88	86
PCBs in Soil Method: AN420 Tested: 13/9/2019					
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1
Surrogates					
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	73	73	70
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 16/9/2019					
Arsenic, As	mg/kg	1	8	7	7
Cadmium, Cd	mg/kg	0.3	0.4	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	19	16	16
Copper, Cu	mg/kg	0.5	68	56	98
Nickel, Ni	mg/kg	0.5	13	10	10
Lead, Pb	mg/kg	1	120	96	89
Zinc, Zn	mg/kg	2	330	220	240
Mercury in Soil Method: AN312 Tested: 16/9/2019					
Mercury	mg/kg	0.05	0.38	0.21	0.24
Moisture Content Method: AN002 Tested: 13/9/2019					
% Moisture	%w/w	1	13.3	13.7	13.0

Parameter	Units	LOR	Sample Number: SE197563.001 Sample Matrix: Soil Sample Date: 10 Sep 2019 Sample Name: S1	SE197563.002 Soil 10 Sep 2019 S2	SE197563.003 Soil 10 Sep 2019 S3
Fibre Identification in soil Method: AN602 Tested: 18/9/2019					
FibreID					
Asbestos Detected	No unit	-	Yes	No	Yes
SemiQuant					
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01
Gravimetric Determination of Asbestos in Soil Method: AN605 Tested: 18/9/2019					
Total Sample Weight*	g	1	**850**	**818**	**916**
ACM in >7mm Sample*	g	0.01	<0.01	<0.01	<0.01
AF/FA in >2mm to <7mm Sample*	g	0.0001	**0.0117**	<0.0001	**0.0226**
AF/FA in <2mm Sample*	g	0.0001	<0.0001	<0.0001	<0.0001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	**0.001**	<0.001	**0.002**
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	**0.001**	<0.001	**0.002**
Fibre Type*	No unit	-	-	-	-

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Mercury in Soil **Method: ME-(AU)-[ENV]AN312**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB183251	mg/kg	0.05	<0.05	0%	97%	96%

Moisture Content **Method: ME-(AU)-[ENV]AN002**

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB183142	%w/w	1	0 - 3%

OC Pesticides in Soil **Method: ME-(AU)-[ENV]AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Hexachlorobenzene (HCB)	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Alpha BHC	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Lindane	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Heptachlor	LB183140	mg/kg	0.1	<0.1	0%	118%	105%
Aldrin	LB183140	mg/kg	0.1	<0.1	0%	123%	104%
Beta BHC	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Delta BHC	LB183140	mg/kg	0.1	<0.1	0%	111%	97%
Heptachlor epoxide	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
o,p'-DDE	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Alpha Endosulfan	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
Gamma Chlordane	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Alpha Chlordane	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
trans-Nonachlor	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
p,p'-DDE	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Dieldrin	LB183140	mg/kg	0.2	<0.2	0%	122%	90%
Endrin	LB183140	mg/kg	0.2	<0.2	0%	117%	104%
o,p'-DDD	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
o,p'-DDT	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Beta Endosulfan	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
p,p'-DDD	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
p,p'-DDT	LB183140	mg/kg	0.1	<0.1	0%	109%	105%
Endosulfan sulphate	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Endrin Aldehyde	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Methoxychlor	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Endrin Ketone	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Isodrin	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Mirex	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Total CLP OC Pesticides	LB183140	mg/kg	1	<1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB183140	%	-	81%	3%	87%	74%

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

OP Pesticides in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dichlorvos	LB183140	mg/kg	0.5	<0.5	0%	78%	82%
Dimethoate	LB183140	mg/kg	0.5	<0.5	0%	NA	NA
Diazinon (Dimpylate)	LB183140	mg/kg	0.5	<0.5	0%	88%	93%
Fenitrothion	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
Malathion	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
Chlorpyrifos (Chlorpyrifos Ethyl)	LB183140	mg/kg	0.2	<0.2	0%	88%	93%
Parathion-ethyl (Parathion)	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
Bromophos Ethyl	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
Methidathion	LB183140	mg/kg	0.5	<0.5	0%	NA	NA
Ethion	LB183140	mg/kg	0.2	<0.2	0%	78%	83%
Azinphos-methyl (Guthion)	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
Total OP Pesticides*	LB183140	mg/kg	1.7	<1.7	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
2-fluorobiphenyl (Surrogate)	LB183140	%	-	94%	2%	88%	84%
d14-p-terphenyl (Surrogate)	LB183140	%	-	98%	2%	90%	90%

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB183140	mg/kg	0.1	<0.1	0 - 7%	104%	102%
2-methylnaphthalene	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
1-methylnaphthalene	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Acenaphthylene	LB183140	mg/kg	0.1	<0.1	10 - 35%	104%	100%
Acenaphthene	LB183140	mg/kg	0.1	<0.1	0 - 57%	107%	109%
Fluorene	LB183140	mg/kg	0.1	<0.1	0 - 7%	NA	NA
Phenanthrene	LB183140	mg/kg	0.1	<0.1	7 - 97%	107%	108%
Anthracene	LB183140	mg/kg	0.1	<0.1	3 - 26%	106%	104%
Fluoranthene	LB183140	mg/kg	0.1	<0.1	15 - 80%	101%	103%
Pyrene	LB183140	mg/kg	0.1	<0.1	4 - 66%	106%	106%
Benzo(a)anthracene	LB183140	mg/kg	0.1	<0.1	4 - 51%	NA	NA
Chrysene	LB183140	mg/kg	0.1	<0.1	3 - 42%	NA	NA
Benzo(b&j)fluoranthene	LB183140	mg/kg	0.1	<0.1	3 - 29%	NA	NA
Benzo(k)fluoranthene	LB183140	mg/kg	0.1	<0.1	8 - 31%	NA	NA
Benzo(a)pyrene	LB183140	mg/kg	0.1	<0.1	3 - 29%	109%	106%
Indeno(1,2,3-cd)pyrene	LB183140	mg/kg	0.1	<0.1	1 - 29%	NA	NA
Dibenzo(ah)anthracene	LB183140	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(ghi)perylene	LB183140	mg/kg	0.1	<0.1	1 - 13%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=0	LB183140	TEQ (mg/kg)	0.2	<0.2	1 - 31%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR	LB183140	TEQ (mg/kg)	0.3	<0.3	1 - 26%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	LB183140	TEQ (mg/kg)	0.2	<0.2	1 - 28%	NA	NA
Total PAH (18)	LB183140	mg/kg	0.8	<0.8	5 - 57%	NA	NA
Total PAH (NEPM/WHO 16)	LB183140	mg/kg	0.8	<0.8			

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d5-nitrobenzene (Surrogate)	LB183140	%	-	100%	2 - 10%	88%	84%
2-fluorobiphenyl (Surrogate)	LB183140	%	-	94%	2%	88%	84%
d14-p-terphenyl (Surrogate)	LB183140	%	-	98%	2%	90%	90%

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

PCBs in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arochlor 1016	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1221	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1232	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1242	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1248	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1254	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1260	LB183140	mg/kg	0.2	<0.2	0%	95%	93%
Arochlor 1262	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1268	LB183140	mg/kg	0.2	<0.2	0%	NA	NA
Total PCBs (Arochlors)	LB183140	mg/kg	1	<1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB183140	%	-	81%	3%	80%	75%

Speciated Phenols in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Phenol	LB183140	mg/kg	0.5	<0.5	0%	100%
2-methyl phenol (o-cresol)	LB183140	mg/kg	0.5	<0.5	0%	NA
3/4-methyl phenol (m/p-cresol)	LB183140	mg/kg	1	<1	0%	NA
Total Cresol	LB183140	mg/kg	1.5	<1.5	0%	NA
2-chlorophenol	LB183140	mg/kg	0.5	<0.5	0%	NA
2,4-dimethylphenol	LB183140	mg/kg	0.5	<0.5	0%	NA
2,6-dichlorophenol	LB183140	mg/kg	0.5	<0.5	0%	NA
2,4-dichlorophenol	LB183140	mg/kg	0.5	<0.5	0%	112%
2,4,6-trichlorophenol	LB183140	mg/kg	0.5	<0.5	0%	86%
2-nitrophenol	LB183140	mg/kg	0.5	<0.5	0%	NA
4-nitrophenol	LB183140	mg/kg	1	<1	0%	NA
2,4,5-trichlorophenol	LB183140	mg/kg	0.5	<0.5	0%	NA
2,3,4,6/2,3,5,6-tetrachlorophenol	LB183140	mg/kg	1	<1	0%	NA
Pentachlorophenol	LB183140	mg/kg	0.5	<0.5	0%	77%
2,4-dinitrophenol	LB183140	mg/kg	2	<2	0%	NA
4-chloro-3-methylphenol	LB183140	mg/kg	2	<2	0%	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
2,4,6-Tribromophenol (Surrogate)	LB183140	%	-	71%	2%	71%
d5-phenol (Surrogate)	LB183140	%	-	108%	3%	107%

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: ME-(AU)-[ENV]AN040/AN320

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB183250	mg/kg	1	<1	15%	101%	96%
Cadmium, Cd	LB183250	mg/kg	0.3	<0.3	0%	115%	88%
Chromium, Cr	LB183250	mg/kg	0.5	<0.5	1%	99%	100%
Copper, Cu	LB183250	mg/kg	0.5	<0.5	7%	104%	98%
Nickel, Ni	LB183250	mg/kg	0.5	<0.5	11%	102%	99%
Lead, Pb	LB183250	mg/kg	1	<1	3%	105%	97%
Zinc, Zn	LB183250	mg/kg	2	<2.0	10%	102%	87%

TRH (Total Recoverable Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN403

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C10-C14	LB183140	mg/kg	20	<20	0%	88%	85%
TRH C15-C28	LB183140	mg/kg	45	<45	0 - 24%	78%	108%
TRH C29-C36	LB183140	mg/kg	45	<45	0%	75%	63%
TRH C37-C40	LB183140	mg/kg	100	<100	0%	NA	NA
TRH C10-C36 Total	LB183140	mg/kg	110	<110	0%	NA	NA
TRH C10-C40 Total (F bands)	LB183140	mg/kg	210	<210	0%	NA	NA

TRH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH >C10-C16	LB183140	mg/kg	25	<25	0%	85%	75%
TRH >C10-C16 - Naphthalene (F2)	LB183140	mg/kg	25	<25	0%	NA	NA
TRH >C16-C34 (F3)	LB183140	mg/kg	90	<90	0 - 26%	75%	105%
TRH >C34-C40 (F4)	LB183140	mg/kg	120	<120	0%	80%	NA

VOC's in Soil Method: ME-(AU)-[ENV]AN433

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene	LB183139	mg/kg	0.1	<0.1	0%	90%	84%
Toluene	LB183139	mg/kg	0.1	<0.1	0%	89%	102%
Ethylbenzene	LB183139	mg/kg	0.1	<0.1	0%	93%	88%
m/p-xylene	LB183139	mg/kg	0.2	<0.2	0%	89%	87%
o-xylene	LB183139	mg/kg	0.1	<0.1	0%	88%	85%

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB183139	mg/kg	0.1	<0.1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB183139	%	-	101%	4 - 8%	93%	83%
d8-toluene (Surrogate)	LB183139	%	-	100%	12 - 22%	84%	96%
Bromofluorobenzene (Surrogate)	LB183139	%	-	104%	7 - 10%	88%	83%

Totals

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Total Xylenes	LB183139	mg/kg	0.3	<0.3	0%	NA	NA
Total BTEX	LB183139	mg/kg	0.6	<0.6	0%	NA	NA

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C6-C10	LB183139	mg/kg	25	<25	0%	86%	97%
TRH C6-C9	LB183139	mg/kg	20	<20	0%	82%	90%

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB183139	%	-	101%	4 - 8%	93%	83%
d8-toluene (Surrogate)	LB183139	%	-	100%	12 - 22%	84%	96%
Bromofluorobenzene (Surrogate)	LB183139	%	-	104%	7 - 10%	88%	83%

VPH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene (F0)	LB183139	mg/kg	0.1	<0.1	0%	NA	NA
TRH C6-C10 minus BTEX (F1)	LB183139	mg/kg	25	<25	0%	85%	101%

METHOD SUMMARY

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

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
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.
AN605	This technique gravimetrically determines the mass of Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight.
AN605	This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free fibres which are only observed by standard trace analysis as per AN 602.
AN605	Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009.

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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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
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Project	**JN00869 - Kingswood**	SGS Reference	**SE197563 R0**
Order Number	(Not specified)	Date Received	12 Sep 2019
Samples	3	Date Reported	19 Sep 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.

Sample #1: Asbestos found in approx 4x2x1mm cement sheet fragments.
Sample #3: Asbestos found in approx 5x3x1mm cement sheet fragments.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

[redacted]

Akheeqar Beniameen
Chemist

Kamrul Ahsan
Senior Chemist

Ly Kim Ha
Organic Section Head

[redacted]

Yusuf Kuthpudin
Asbestos Analyst

RESULTS

Fibre Identification in soil Method **AN602**

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE197563.001	S1	Soil	850g Sand, Soil, Rocks, Plant Matter	10 Sep 2019	Chrysotile Asbestos Found Synthetic Mineral Fibres Detected Organic Fibres Detected	<0.01
SE197563.002	S2	Soil	818g Sand, Soil, Rocks, Plant Matter	10 Sep 2019	No Asbestos Found Organic Fibres Detected	<0.01
SE197563.003	S3	Soil	916g Sand, Soil, Rocks, Plant Matter	10 Sep 2019	Chrysotile Asbestos Found Synthetic Mineral Fibres Detected Organic Fibres Detected	<0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 18/9/2019

PARAMETER	UOM	LOR	S1 SOIL - 10/9/2019 SE197563.001	S2 SOIL - 10/9/2019 SE197563.002	S3 SOIL - 10/9/2019 SE197563.003
Total Sample Weight*	g	1	**850**	**818**	**916**
ACM in >7mm Sample*	g	0.01	<0.01	<0.01	<0.01
AF/FA in >2mm to <7mm Sample*	g	0.0001	**0.0117**	<0.0001	**0.0226**
AF/FA in <2mm Sample*	g	0.0001	<0.0001	<0.0001	<0.0001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	**0.001**	<0.001	**0.002**
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	**0.001**	<0.001	**0.002**
Fibre Type*	No unit	-	-	-	-

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.
AN605	This technique gravimetrically determines the mass of Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight.
AN605	This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free fibres which are only observed by standard trace analysis as per AN 602.
AN605	Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009.

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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Craig Wellings	Manager	Huong Crawford
Client	EHO CONSULTING PTY LIMITED	Laboratory	SGS Alexandria Environmental
Address	16/380 PENNANT HILLS ROAD PENNANT HILLS NSW 2120	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	(Not specified)	Telephone	+61 2 8594 0400
Facsimile	(Not specified)	Facsimile	+61 2 8594 0499
Email	craig@ehoc.com.au	Email	au.environmental.sydney@sgs.com
Project	**JN00869 Kingswood**	SGS Reference	**SE202652 R0**
Order Number	(Not specified)	Date Received	10 Feb 2020
Samples	4	Date Reported	14 Feb 2020

COMMENTS

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

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

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

[redacted]

Akheeqar BENIAMEEN
Chemist

Huong CRAWFORD
Production Manager

Kamrul AHSAN
Senior Chemist

[redacted]

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

Parameter	Units	LOR	Sample Number: SE202652.001 Sample Matrix: Soil Sample Date: 10 Feb 2020 Sample Name: BH4	SE202652.002 Soil 10 Feb 2020 BH5	SE202652.003 Soil 10 Feb 2020 BH6	SE202652.004 Soil 10 Feb 2020 DUPLICATE
VOC's in Soil Method: AN433 Tested: 11/2/2020						
Monocyclic Aromatic Hydrocarbons						
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Polycyclic VOCs						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	**118**	**110**	**115**	**113**
d8-toluene (Surrogate)	%	-	**103**	**95**	**98**	**96**
Bromofluorobenzene (Surrogate)	%	-	**102**	**92**	**93**	**95**
Totals						
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6
Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 11/2/2020						
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	**118**	**110**	**115**	**113**
d8-toluene (Surrogate)	%	-	**103**	**95**	**98**	**96**
Bromofluorobenzene (Surrogate)	%	-	**102**	**92**	**93**	**95**
VPH F Bands						
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

Parameter	Units	LOR	Sample Number: SE202652.001 Sample Matrix: Soil Sample Date: 10 Feb 2020 Sample Name: BH4	SE202652.002 Soil 10 Feb 2020 BH5	SE202652.003 Soil 10 Feb 2020 BH6	SE202652.004 Soil 10 Feb 2020 DUPLICATE
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 11/2/2020						
TRH C10-C14	mg/kg	20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210
TRH F Bands						
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 11/2/2020						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Surrogates						
d5-nitrobenzene (Surrogate)	%	-	**76**	**70**	**74**	**74**
2-fluorobiphenyl (Surrogate)	%	-	**88**	**84**	**92**	**88**
d14-p-terphenyl (Surrogate)	%	-	**88**	**88**	**88**	**88**
Speciated Phenols in Soil Method: AN420 Tested: 11/2/2020						
Phenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1	<1	<1	<1
Total Cresol	mg/kg	1.5	<1.5	<1.5	<1.5	<1.5
2-chlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2,4-dimethylphenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2,6-dichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2,4-dichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-trichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2-nitrophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
4-nitrophenol	mg/kg	1	<1	<1	<1	<1
2,4,5-trichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1	<1	<1	<1
Pentachlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2,4-dinitrophenol	mg/kg	2	<2	<2	<2	<2
4-chloro-3-methylphenol	mg/kg	2	<2	<2	<2	<2

Parameter	Units	LOR	Sample Number: SE202652.001 Sample Matrix: Soil Sample Date: 10 Feb 2020 Sample Name: BH4	SE202652.002 Soil 10 Feb 2020 BH5	SE202652.003 Soil 10 Feb 2020 BH6	SE202652.004 Soil 10 Feb 2020 DUPLICATE
Speciated Phenols in Soil Method: AN420 Tested: 11/2/2020 (continued)						
Surrogates						
2,4,6-Tribromophenol (Surrogate)	%	-	125	123	120	124
d5-phenol (Surrogate)	%	-	121	123	124	125
OC Pesticides in Soil Method: AN420 Tested: 11/2/2020						
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	126	118	124	122
OP Pesticides in Soil Method: AN420 Tested: 11/2/2020						
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	88	84	92	88
d14-p-terphenyl (Surrogate)	%	-	88	88	88	88

Parameter	Units	Sample Number / Sample Matrix / Sample Date / Sample Name / LOR	SE202652.001 Soil 10 Feb 2020 BH4	SE202652.002 Soil 10 Feb 2020 BH5	SE202652.003 Soil 10 Feb 2020 BH6	SE202652.004 Soil 10 Feb 2020 DUPLICATE
PCBs in Soil Method: AN420 Tested: 11/2/2020						
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**126**	**118**	**124**	**122**
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 11/2/2020						
Arsenic, As	mg/kg	1	**2**	**5**	**6**	**2**
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	**0.4**	<0.3
Chromium, Cr	mg/kg	0.5	**4.3**	**17**	**12**	**4.0**
Copper, Cu	mg/kg	0.5	**3.4**	**12**	**15**	**3.1**
Nickel, Ni	mg/kg	0.5	**3.0**	**6.9**	**8.0**	**3.0**
Lead, Pb	mg/kg	1	**6**	**19**	**20**	**6**
Zinc, Zn	mg/kg	2	**21**	**23**	**59**	**21**
Mercury in Soil Method: AN312 Tested: 11/2/2020						
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content Method: AN002 Tested: 11/2/2020						
% Moisture	%w/w	1	**19.4**	**16.8**	**22.5**	**19.0**
Fibre Identification in soil Method: AN602 Tested: 13/2/2020						
FibreID						
Asbestos Detected	No unit	-	No	No	No	-

Parameter	Units	LOR	Sample Number: SE202652.001 Sample Matrix: Soil Sample Date: 10 Feb 2020 Sample Name: BH4	Sample Number: SE202652.002 Sample Matrix: Soil Sample Date: 10 Feb 2020 Sample Name: BH5	Sample Number: SE202652.003 Sample Matrix: Soil Sample Date: 10 Feb 2020 Sample Name: BH6	Sample Number: SE202652.004 Sample Matrix: Soil Sample Date: 10 Feb 2020 Sample Name: DUPLICATE
Fibre Identification in soil Method: AN602 Tested: 13/2/2020 (continued)						
SemiQuant						
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	-
Gravimetric Determination of Asbestos in Soil Method: AN605 Tested: 13/2/2020						
Total Sample Weight*	g	1	323	424	511	-
ACM in >7mm Sample*	g	0.01	<0.01	<0.01	<0.01	-
AF/FA in >2mm to <7mm Sample*	g	0.0001	<0.0001	<0.0001	<0.0001	-
AF/FA in <2mm Sample*	g	0.0001	<0.0001	<0.0001	<0.0001	-
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01	-
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	-
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	-
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	-
Fibre Type*	No unit	-	-	-	-	-

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Mercury in Soil **Method: ME-(AU)-[ENV]AN312**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB192765	mg/kg	0.05	<0.05	0%	113%	101%

Moisture Content **Method: ME-(AU)-[ENV]AN002**

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB192755	%w/w	1	0 - 4%

OC Pesticides in Soil **Method: ME-(AU)-[ENV]AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Hexachlorobenzene (HCB)	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Alpha BHC	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Lindane	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Heptachlor	LB192754	mg/kg	0.1	<0.1	0%	72%	102%
Aldrin	LB192754	mg/kg	0.1	<0.1	0%	93%	115%
Beta BHC	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Delta BHC	LB192754	mg/kg	0.1	<0.1	0%	90%	114%
Heptachlor epoxide	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
o,p'-DDE	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Alpha Endosulfan	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
Gamma Chlordane	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Alpha Chlordane	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
trans-Nonachlor	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
p,p'-DDE	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Dieldrin	LB192754	mg/kg	0.2	<0.2	0%	85%	108%
Endrin	LB192754	mg/kg	0.2	<0.2	0%	79%	103%
o,p'-DDD	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
o,p'-DDT	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Beta Endosulfan	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
p,p'-DDD	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
p,p'-DDT	LB192754	mg/kg	0.1	<0.1	0%	80%	85%
Endosulfan sulphate	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Endrin Aldehyde	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Methoxychlor	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Endrin Ketone	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Isodrin	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Mirex	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Total CLP OC Pesticides	LB192754	mg/kg	1	<1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB192754	%	-	115%	4%	109%	120%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

OP Pesticides in Soil **Method: ME-(AU)-[ENV]AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dichlorvos	LB192754	mg/kg	0.5	<0.5	0%	80%	80%
Dimethoate	LB192754	mg/kg	0.5	<0.5	0%	NA	NA
Diazinon (Dimpylate)	LB192754	mg/kg	0.5	<0.5	0%	80%	77%
Fenitrothion	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
Malathion	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
Chlorpyrifos (Chlorpyrifos Ethyl)	LB192754	mg/kg	0.2	<0.2	0%	91%	80%
Parathion-ethyl (Parathion)	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
Bromophos Ethyl	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
Methidathion	LB192754	mg/kg	0.5	<0.5	0%	NA	NA
Ethion	LB192754	mg/kg	0.2	<0.2	0%	72%	70%
Azinphos-methyl (Guthion)	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
Total OP Pesticides*	LB192754	mg/kg	1.7	<1.7	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
2-fluorobiphenyl (Surrogate)	LB192754	%	-	88%	0 - 2%	86%	86%
d14-p-terphenyl (Surrogate)	LB192754	%	-	86%	0%	78%	80%

PAH (Polynuclear Aromatic Hydrocarbons) in Soil **Method: ME-(AU)-[ENV]AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB192754	mg/kg	0.1	<0.1	0%	90%	89%
2-methylnaphthalene	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
1-methylnaphthalene	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Acenaphthylene	LB192754	mg/kg	0.1	<0.1	0%	102%	89%
Acenaphthene	LB192754	mg/kg	0.1	<0.1	0%	89%	88%
Fluorene	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Phenanthrene	LB192754	mg/kg	0.1	<0.1	0%	89%	88%
Anthracene	LB192754	mg/kg	0.1	<0.1	0%	86%	85%
Fluoranthene	LB192754	mg/kg	0.1	<0.1	8 - 17%	88%	85%
Pyrene	LB192754	mg/kg	0.1	<0.1	4 - 18%	92%	91%
Benzo(a)anthracene	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Chrysene	LB192754	mg/kg	0.1	<0.1	0 - 7%	NA	NA
Benzo(b&j)fluoranthene	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(k)fluoranthene	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(a)pyrene	LB192754	mg/kg	0.1	<0.1	0%	100%	97%
Indeno(1,2,3-cd)pyrene	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Dibenzo(ah)anthracene	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(ghi)perylene	LB192754	mg/kg	0.1	<0.1	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=0	LB192754	TEQ (mg/kg)	0.2	<0.2	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR	LB192754	TEQ (mg/kg)	0.3	<0.3	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	LB192754	TEQ (mg/kg)	0.2	<0.2	0%	NA	NA
Total PAH (18)	LB192754	mg/kg	0.8	<0.8	0 - 11%	NA	NA
Total PAH (NEPM/WHO 16)	LB192754	mg/kg	0.8	<0.8			

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d5-nitrobenzene (Surrogate)	LB192754	%	-	84%	0%	78%	72%
2-fluorobiphenyl (Surrogate)	LB192754	%	-	88%	0 - 2%	86%	86%
d14-p-terphenyl (Surrogate)	LB192754	%	-	86%	0%	78%	80%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

PCBs in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arochlor 1016	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1221	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1232	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1242	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1248	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1254	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1260	LB192754	mg/kg	0.2	<0.2	0%	110%	121%
Arochlor 1262	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1268	LB192754	mg/kg	0.2	<0.2	0%	NA	NA
Total PCBs (Arochlors)	LB192754	mg/kg	1	<1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB192754	%	-	115%	4%	114%	122%

Speciated Phenols in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Phenol	LB192754	mg/kg	0.5	<0.5	0%	123%	119%
2-methyl phenol (o-cresol)	LB192754	mg/kg	0.5	<0.5	0%	NA	NA
3/4-methyl phenol (m/p-cresol)	LB192754	mg/kg	1	<1	0%	NA	NA
Total Cresol	LB192754	mg/kg	1.5	<1.5	0%	NA	NA
2-chlorophenol	LB192754	mg/kg	0.5	<0.5	0%	NA	NA
2,4-dimethylphenol	LB192754	mg/kg	0.5	<0.5	0%	NA	NA
2,6-dichlorophenol	LB192754	mg/kg	0.5	<0.5	0%	NA	NA
2,4-dichlorophenol	LB192754	mg/kg	0.5	<0.5	0%	102%	100%
2,4,6-trichlorophenol	LB192754	mg/kg	0.5	<0.5	0%	95%	94%
2-nitrophenol	LB192754	mg/kg	0.5	<0.5	0%	NA	NA
4-nitrophenol	LB192754	mg/kg	1	<1	0%	NA	NA
2,4,5-trichlorophenol	LB192754	mg/kg	0.5	<0.5	0%	NA	NA
2,3,4,6/2,3,5,6-tetrachlorophenol	LB192754	mg/kg	1	<1	0%	NA	NA
Pentachlorophenol	LB192754	mg/kg	0.5	<0.5	0%	87%	81%
2,4-dinitrophenol	LB192754	mg/kg	2	<2	0%	NA	NA
4-chloro-3-methylphenol	LB192754	mg/kg	2	<2	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
2,4,6-Tribromophenol (Surrogate)	LB192754	%	-	124%	1%	120%	128%
d5-phenol (Surrogate)	LB192754	%	-	117%	3%	126%	119%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES **Method: ME-(AU)-[ENV]AN040/AN320**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB192764	mg/kg	1	<1	11 - 101%	109%	104%
Cadmium, Cd	LB192764	mg/kg	0.3	<0.3	0%	105%	90%
Chromium, Cr	LB192764	mg/kg	0.5	<0.5	9 - 20%	91%	106%
Copper, Cu	LB192764	mg/kg	0.5	<0.5	2 - 112%	109%	109%
Nickel, Ni	LB192764	mg/kg	0.5	<0.5	0 - 86%	102%	105%
Lead, Pb	LB192764	mg/kg	1	<1	6 - 41%	115%	107%
Zinc, Zn	LB192764	mg/kg	2	<2.0	7 - 33%	111%	110%

TRH (Total Recoverable Hydrocarbons) in Soil **Method: ME-(AU)-[ENV]AN403**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C10-C14	LB192754	mg/kg	20	<20	0%	88%	93%
TRH C15-C28	LB192754	mg/kg	45	<45	0%	88%	95%
TRH C29-C36	LB192754	mg/kg	45	<45	0%	75%	68%
TRH C37-C40	LB192754	mg/kg	100	<100	0%	NA	NA
TRH C10-C36 Total	LB192754	mg/kg	110	<110	0%	NA	NA
TRH >C10-C40 Total (F bands)	LB192754	mg/kg	210	<210	0%	NA	NA

TRH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH >C10-C16	LB192754	mg/kg	25	<25	0%	88%	95%
TRH >C10-C16 - Naphthalene (F2)	LB192754	mg/kg	25	<25	0%	NA	NA
TRH >C16-C34 (F3)	LB192754	mg/kg	90	<90	0%	88%	95%
TRH >C34-C40 (F4)	LB192754	mg/kg	120	<120	0%	90%	NA

VOC's in Soil **Method: ME-(AU)-[ENV]AN433**

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene	LB192753	mg/kg	0.1	<0.1	0%	85%	80%
Toluene	LB192753	mg/kg	0.1	<0.1	0%	88%	80%
Ethylbenzene	LB192753	mg/kg	0.1	<0.1	0%	87%	81%
m/p-xylene	LB192753	mg/kg	0.2	<0.2	0%	87%	81%
o-xylene	LB192753	mg/kg	0.1	<0.1	0%	87%	81%

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB192753	mg/kg	0.1	<0.1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB192753	%	-	130%	9 - 17%	125%	115%
d8-toluene (Surrogate)	LB192753	%	-	115%	12 - 17%	114%	100%
Bromofluorobenzene (Surrogate)	LB192753	%	-	108%	13 - 16%	106%	94%

Totals

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Total Xylenes	LB192753	mg/kg	0.3	<0.3	0%	NA	NA
Total BTEX	LB192753	mg/kg	0.6	<0.6	0%	NA	NA

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C6-C10	LB192753	mg/kg	25	<25	0%	93%	84%
TRH C6-C9	LB192753	mg/kg	20	<20	0%	95%	86%

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB192753	%	-	130%	9 - 17%	125%	115%
d8-toluene (Surrogate)	LB192753	%	-	115%	12 - 17%	114%	100%
Bromofluorobenzene (Surrogate)	LB192753	%	-	108%	13 - 16%	106%	94%

VPH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene (F0)	LB192753	mg/kg	0.1	<0.1	0%	NA	NA
TRH C6-C10 minus BTEX (F1)	LB192753	mg/kg	25	<25	0%	96%	85%

SGS

METHOD SUMMARY

SE202652 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.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
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.
AN605	This technique gravimetrically determines the mass of Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight.
AN605	This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free fibres which are only observed by standard trace analysis as per AN 602.
AN605	Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009.

FOOTNOTES

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

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

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

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

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

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

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

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

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

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Craig Wellings	Manager	Huong Crawford
Client	EHO CONSULTING PTY LIMITED	Laboratory	SGS Alexandria Environmental
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Email	craig@ehoc.com.au	Email	au.environmental.sydney@sgs.com
Project	**JN00869 Kingswood**	SGS Reference	**SE202652 R0**
Order Number	(Not specified)	Date Received	10 Feb 2020
Samples	3	Date Reported	14 Feb 2020

COMMENTS

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

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

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

[redacted]

Akheeqar BENIAMEEN
Chemist

Huong CRAWFORD
Production Manager

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Senior Chemist

[redacted]

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

SGS

ANALYTICAL REPORT

SE202652 R0

RESULTS

Fibre Identification in soil Method **AN602**

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE202652.001	BH4	Soil	323g Clay, Sand, Soil, Rocks	10 Feb 2020	No Asbestos Found Organic Fibres Detected	<0.01
SE202652.002	BH5	Soil	424g Clay, Sand, Soil, Rocks	10 Feb 2020	No Asbestos Found Organic Fibres Detected	<0.01
SE202652.003	BH6	Soil	511g Clay, Sand, Soil, Rocks	10 Feb 2020	No Asbestos Found Organic Fibres Detected	<0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 13/2/2020

PARAMETER	UOM	LOR	BH4 SOIL - 10/2/2020 SE202652.001	BH5 SOIL - 10/2/2020 SE202652.002	BH6 SOIL - 10/2/2020 SE202652.003
Total Sample Weight*	g	1	**323**	**424**	**511**
ACM in >7mm Sample*	g	0.01	<0.01	<0.01	<0.01
AF/FA in >2mm to <7mm Sample*	g	0.0001	<0.0001	<0.0001	<0.0001
AF/FA in <2mm Sample*	g	0.0001	<0.0001	<0.0001	<0.0001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	-	-	-

METHOD SUMMARY

SE202652 R0

METHOD	METHODOLOGY SUMMARY
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples , Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection 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.
AN605	This technique gravimetrically determines the mass of Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight.
AN605	This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free fibres which are only observed by standard trace analysis as per AN 602.
AN605	Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009.

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/en-gb/environment-health-and-safety.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Craig Wellings	Manager	Huong Crawford
Client	EHO CONSULTING PTY LIMITED	Laboratory	SGS Alexandria Environmental
Address	16/380 PENNANT HILLS ROAD PENNANT HILLS NSW 2120	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	(Not specified)	Telephone	+61 2 8594 0400
Facsimile	(Not specified)	Facsimile	+61 2 8594 0499
Email	craig@ehoc.com.au	Email	au.environmental.sydney@sgs.com
Project	**JN869**	SGS Reference	**SE207037 R0**
Order Number	(Not specified)	Date Received	02 Jun 2020
Samples	13	Date Reported	10 Jun 2020

COMMENTS

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

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

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

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

[redacted]

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Organic Chemist/Metals Chemis

Dong LIANG
Metals/Inorganics Team Leader

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Kamrul AHSAN
Senior Chemist

Ly Kim HA
Organic Section Head

Yusuf KUTHPUDIN
Asbestos Analyst

Parameter	Units	LOR	Sample Number: SE207037.001 Sample Matrix: Soil Sample Date: 02 Jun 2020 Sample Name: G1	SE207037.002 Soil 02 Jun 2020 G2	SE207037.003 Soil 02 Jun 2020 F1	SE207037.004 Soil 02 Jun 2020 F2
VOC's in Soil Method: AN433 Tested: 5/6/2020						
Monocyclic Aromatic Hydrocarbons						
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Polycyclic VOCs						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	**113**	**115**	**125**	**124**
d8-toluene (Surrogate)	%	-	**109**	**111**	**119**	**121**
Bromofluorobenzene (Surrogate)	%	-	**92**	**94**	**99**	**103**
Totals						
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6
Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 5/6/2020						
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	**113**	**115**	**125**	**124**
d8-toluene (Surrogate)	%	-	**109**	**111**	**119**	**121**
Bromofluorobenzene (Surrogate)	%	-	**92**	**94**	**99**	**103**
VPH F Bands						
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

Parameter	Units	LOR	Sample Number: SE207037.001 Sample Matrix: Soil Sample Date: 02 Jun 2020 Sample Name: G1	SE207037.002 Soil 02 Jun 2020 G2	SE207037.003 Soil 02 Jun 2020 F1	SE207037.004 Soil 02 Jun 2020 F2
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 5/6/2020						
TRH C10-C14	mg/kg	20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	**51**	**470**	<45
TRH C29-C36	mg/kg	45	**54**	**71**	**630**	<45
TRH C37-C40	mg/kg	100	<100	<100	**180**	<100
TRH C10-C36 Total	mg/kg	110	<110	**120**	**1100**	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	**1300**	<210
TRH F Bands						
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	**91**	**920**	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	**380**	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 5/6/2020						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Surrogates						
d5-nitrobenzene (Surrogate)	%	-	**93**	**96**	**98**	**92**
2-fluorobiphenyl (Surrogate)	%	-	**88**	**94**	**94**	**82**
d14-p-terphenyl (Surrogate)	%	-	**99**	**100**	**94**	**91**
Speciated Phenols in Soil Method: AN420 Tested: 5/6/2020						
Phenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1	<1	<1	<1
Total Cresol	mg/kg	1.5	<1.5	<1.5	<1.5	<1.5
2-chlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2,4-dimethylphenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2,6-dichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2,4-dichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-trichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2-nitrophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
4-nitrophenol	mg/kg	1	<1	<1	<1	<1
2,4,5-trichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1	<1	<1	<1
Pentachlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
2,4-dinitrophenol	mg/kg	2	<2	<2	<2	<2
4-chloro-3-methylphenol	mg/kg	2	<2	<2	<2	<2

Parameter	Units	LOR	Sample Number: SE207037.001 Sample Matrix: Soil Sample Date: 02 Jun 2020 Sample Name: G1	SE207037.002 Soil 02 Jun 2020 G2	SE207037.003 Soil 02 Jun 2020 F1	SE207037.004 Soil 02 Jun 2020 F2
Speciated Phenols in Soil Method: AN420 Tested: 5/6/2020 (continued)						
Surrogates						
2,4,6-Tribromophenol (Surrogate)	%	-	98	99	97	96
d5-phenol (Surrogate)	%	-	89	91	92	89
OC Pesticides in Soil Method: AN420 Tested: 5/6/2020						
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	103	107	101	97
OP Pesticides in Soil Method: AN420 Tested: 5/6/2020						
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	88	94	94	82
d14-p-terphenyl (Surrogate)	%	-	99	100	94	91

Parameter	Units	Sample Number / Sample Matrix / Sample Date / Sample Name / LOR	SE207037.001 Soil 02 Jun 2020 G1	SE207037.002 Soil 02 Jun 2020 G2	SE207037.003 Soil 02 Jun 2020 F1	SE207037.004 Soil 02 Jun 2020 F2
PCBs in Soil Method: AN420 Tested: 5/6/2020						
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**103**	**107**	**101**	**97**
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 5/6/2020						
Arsenic, As	mg/kg	1	**3**	**2**	**3**	**5**
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	**6.1**	**4.7**	**17**	**15**
Copper, Cu	mg/kg	0.5	**13**	**10**	**14**	**94**
Nickel, Ni	mg/kg	0.5	**3.1**	**2.3**	**9.8**	**45**
Lead, Pb	mg/kg	1	**16**	**13**	**20**	**11**
Zinc, Zn	mg/kg	2	**70**	**56**	**59**	**61**
Mercury in Soil Method: AN312 Tested: 5/6/2020						
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content Method: AN002 Tested: 5/6/2020						
% Moisture	%w/w	1	**19.0**	**7.3**	**10.4**	**5.2**
Fibre Identification in soil Method: AN602 Tested: 10/6/2020						
FibreID						
Asbestos Detected	No unit	-	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE207037.001 Soil 02 Jun 2020 G1	SE207037.002 Soil 02 Jun 2020 G2	SE207037.003 Soil 02 Jun 2020 F1	SE207037.004 Soil 02 Jun 2020 F2
Fibre Identification in soil Method: AN602 Tested: 10/6/2020 (continued)							
SemiQuant							
Estimated Fibres*	%w/w	0.01		-	-	-	-

Parameter	Units	LOR	Sample Number: SE207037.005 Sample Matrix: Soil Sample Date: 02 Jun 2020 Sample Name: F3	SE207037.006 Soil 02 Jun 2020 G1A	SE207037.007 Soil 02 Jun 2020 G2A	SE207037.008 Soil 02 Jun 2020 F1A
VOC's in Soil Method: AN433 Tested: 5/6/2020						
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)	%	-	**111**	-	-	-
d8-toluene (Surrogate)	%	-	**107**	-	-	-
Bromofluorobenzene (Surrogate)	%	-	**91**	-	-	-
Totals						
Total Xylenes	mg/kg	0.3	<0.3	-	-	-
Total BTEX	mg/kg	0.6	<0.6	-	-	-
Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 5/6/2020						
TRH C6-C10	mg/kg	25	<25	-	-	-
TRH C6-C9	mg/kg	20	<20	-	-	-
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	**111**	-	-	-
d8-toluene (Surrogate)	%	-	**107**	-	-	-
Bromofluorobenzene (Surrogate)	%	-	**91**	-	-	-
VPH F Bands						
Benzene (F0)	mg/kg	0.1	<0.1	-	-	-
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	-	-	-

Parameter	Units	LOR	Sample Number: SE207037.005 Sample Matrix: Soil Sample Date: 02 Jun 2020 Sample Name: F3	SE207037.006 Soil 02 Jun 2020 G1A	SE207037.007 Soil 02 Jun 2020 G2A	SE207037.008 Soil 02 Jun 2020 F1A
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 5/6/2020						
TRH C10-C14	mg/kg	20	<20	-	-	-
TRH C15-C28	mg/kg	45	<45	-	-	-
TRH C29-C36	mg/kg	45	<45	-	-	-
TRH C37-C40	mg/kg	100	<100	-	-	-
TRH C10-C36 Total	mg/kg	110	<110	-	-	-
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	-	-	-
TRH F Bands						
TRH >C10-C16	mg/kg	25	<25	-	-	-
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	-	-	-
TRH >C16-C34 (F3)	mg/kg	90	<90	-	-	-
TRH >C34-C40 (F4)	mg/kg	120	<120	-	-	-
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 5/6/2020						
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	-	-	-
Surrogates						
d5-nitrobenzene (Surrogate)	%	-	**96**	-	-	-
2-fluorobiphenyl (Surrogate)	%	-	**87**	-	-	-
d14-p-terphenyl (Surrogate)	%	-	**107**	-	-	-
Speciated Phenols in Soil Method: AN420 Tested: 5/6/2020						
Phenol	mg/kg	0.5	<0.5	-	-	-
2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5	-	-	-
3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1	-	-	-
Total Cresol	mg/kg	1.5	<1.5	-	-	-
2-chlorophenol	mg/kg	0.5	<0.5	-	-	-
2,4-dimethylphenol	mg/kg	0.5	<0.5	-	-	-
2,6-dichlorophenol	mg/kg	0.5	<0.5	-	-	-
2,4-dichlorophenol	mg/kg	0.5	<0.5	-	-	-
2,4,6-trichlorophenol	mg/kg	0.5	<0.5	-	-	-
2-nitrophenol	mg/kg	0.5	<0.5	-	-	-
4-nitrophenol	mg/kg	1	<1	-	-	-
2,4,5-trichlorophenol	mg/kg	0.5	<0.5	-	-	-
2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1	-	-	-
Pentachlorophenol	mg/kg	0.5	<0.5	-	-	-
2,4-dinitrophenol	mg/kg	2	<2	-	-	-
4-chloro-3-methylphenol	mg/kg	2	<2	-	-	-

Parameter	Units	LOR	Sample Number: SE207037.005 Sample Matrix: Soil Sample Date: 02 Jun 2020 Sample Name: F3	SE207037.006 Soil 02 Jun 2020 G1A	SE207037.007 Soil 02 Jun 2020 G2A	SE207037.008 Soil 02 Jun 2020 F1A
Speciated Phenols in Soil Method: AN420 Tested: 10/6/2020 (continued)						
Surrogates						
2,4,6-Tribromophenol (Surrogate)	%	-	**94**	-	-	-
d5-phenol (Surrogate)	%	-	**88**	-	-	-
OC Pesticides in Soil Method: AN420 Tested: 5/6/2020						
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	-	-	-
Alpha BHC	mg/kg	0.1	<0.1	-	-	-
Lindane	mg/kg	0.1	<0.1	-	-	-
Heptachlor	mg/kg	0.1	<0.1	-	-	-
Aldrin	mg/kg	0.1	<0.1	-	-	-
Beta BHC	mg/kg	0.1	<0.1	-	-	-
Delta BHC	mg/kg	0.1	<0.1	-	-	-
Heptachlor epoxide	mg/kg	0.1	<0.1	-	-	-
o,p'-DDE	mg/kg	0.1	<0.1	-	-	-
Alpha Endosulfan	mg/kg	0.2	<0.2	-	-	-
Gamma Chlordane	mg/kg	0.1	<0.1	-	-	-
Alpha Chlordane	mg/kg	0.1	<0.1	-	-	-
trans-Nonachlor	mg/kg	0.1	<0.1	-	-	-
p,p'-DDE	mg/kg	0.1	<0.1	-	-	-
Dieldrin	mg/kg	0.2	<0.2	-	-	-
Endrin	mg/kg	0.2	<0.2	-	-	-
o,p'-DDD	mg/kg	0.1	<0.1	-	-	-
o,p'-DDT	mg/kg	0.1	<0.1	-	-	-
Beta Endosulfan	mg/kg	0.2	<0.2	-	-	-
p,p'-DDD	mg/kg	0.1	<0.1	-	-	-
p,p'-DDT	mg/kg	0.1	<0.1	-	-	-
Endosulfan sulphate	mg/kg	0.1	<0.1	-	-	-
Endrin Aldehyde	mg/kg	0.1	<0.1	-	-	-
Methoxychlor	mg/kg	0.1	<0.1	-	-	-
Endrin Ketone	mg/kg	0.1	<0.1	-	-	-
Isodrin	mg/kg	0.1	<0.1	-	-	-
Mirex	mg/kg	0.1	<0.1	-	-	-
Total CLP OC Pesticides	mg/kg	1	<1	-	-	-
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**102**	-	-	-
OP Pesticides in Soil Method: AN420 Tested: 5/6/2020						
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	-	-	-
Total OP Pesticides*	mg/kg	1.7	<1.7	-	-	-
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	**87**	-	-	-
d14-p-terphenyl (Surrogate)	%	-	**107**	-	-	-

Parameter	Units	LOR	Sample Number: SE207037.005 Sample Matrix: Soil Sample Date: 02 Jun 2020 Sample Name: F3	SE207037.006 Soil 02 Jun 2020 G1A	SE207037.007 Soil 02 Jun 2020 G2A	SE207037.008 Soil 02 Jun 2020 F1A
PCBs in Soil Method: AN420 Tested: 5/6/2020						
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)	%	-	**102**	-	-	-
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 5/6/2020						
Arsenic, As	mg/kg	1	**1**	-	-	-
Cadmium, Cd	mg/kg	0.3	<0.3	-	-	-
Chromium, Cr	mg/kg	0.5	**20**	-	-	-
Copper, Cu	mg/kg	0.5	**40**	-	-	-
Nickel, Ni	mg/kg	0.5	**68**	-	-	-
Lead, Pb	mg/kg	1	**6**	-	-	-
Zinc, Zn	mg/kg	2	**48**	-	-	-
Mercury in Soil Method: AN312 Tested: 5/6/2020						
Mercury	mg/kg	0.05	<0.05	-	-	-
Moisture Content Method: AN002 Tested: 5/6/2020						
% Moisture	%w/w	1	**12.5**	-	-	-
Fibre Identification in soil Method: AN602 Tested: 10/6/2020						
FibreID						
Asbestos Detected	No unit	-	-	No	No	No

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE207037.005 Soil 02 Jun 2020 F3	SE207037.006 Soil 02 Jun 2020 G1A	SE207037.007 Soil 02 Jun 2020 G2A	SE207037.008 Soil 02 Jun 2020 F1A
Fibre Identification in soil **Method: AN602** **Tested: 10/6/2020** (continued)							
SemiQuant							
Estimated Fibres*	%w/w	0.01		-	<0.01	<0.01	<0.01

Parameter	Units	LOR	Sample Number: SE207037.009 Sample Matrix: Soil Sample Date: 02 Jun 2020 Sample Name: F2A	SE207037.010 Soil 02 Jun 2020 F3A	SE207037.011 Soil 02 Jun 2020 Trip Spike	SE207037.012 Soil 02 Jun 2020 Trip Blank
VOC's in Soil Method: AN433 Tested: 10/6/2020						
Monocyclic Aromatic Hydrocarbons						
Benzene	mg/kg	0.1	-	-	[111%]	<0.1
Toluene	mg/kg	0.1	-	-	[107%]	<0.1
Ethylbenzene	mg/kg	0.1	-	-	[102%]	<0.1
m/p-xylene	mg/kg	0.2	-	-	[103%]	<0.2
o-xylene	mg/kg	0.1	-	-	[103%]	<0.1
Polycyclic VOCs						
Naphthalene	mg/kg	0.1	-	-	-	<0.1
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	**110**	**112**
d8-toluene (Surrogate)	%	-	-	-	**110**	**109**
Bromofluorobenzene (Surrogate)	%	-	-	-	**94**	**91**
Totals						
Total Xylenes	mg/kg	0.3	-	-	-	<0.3
Total BTEX	mg/kg	0.6	-	-	-	<0.6
Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 10/6/2020						
TRH C6-C10	mg/kg	25	-	-	-	<25
TRH C6-C9	mg/kg	20	-	-	-	<20
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	**112**
d8-toluene (Surrogate)	%	-	-	-	-	**109**
Bromofluorobenzene (Surrogate)	%	-	-	-	-	**91**
VPH F Bands						
Benzene (F0)	mg/kg	0.1	-	-	-	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	-	-	-	<25

Parameter	Units	LOR	Sample Number: SE207037.009 Sample Matrix: Soil Sample Date: 02 Jun 2020 Sample Name: F2A	SE207037.010 Soil 02 Jun 2020 F3A	SE207037.011 Soil 02 Jun 2020 Trip Spike	SE207037.012 Soil 02 Jun 2020 Trip Blank
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 10/6/2020						
TRH C10-C14	mg/kg	20	-	-	-	<20
TRH C15-C28	mg/kg	45	-	-	-	<45
TRH C29-C36	mg/kg	45	-	-	-	<45
TRH C37-C40	mg/kg	100	-	-	-	<100
TRH C10-C36 Total	mg/kg	110	-	-	-	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	-	-	-	<210
TRH F Bands						
TRH >C10-C16	mg/kg	25	-	-	-	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	-	-	-	<25
TRH >C16-C34 (F3)	mg/kg	90	-	-	-	<90
TRH >C34-C40 (F4)	mg/kg	120	-	-	-	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 10/6/2020						
Naphthalene	mg/kg	0.1	-	-	-	-
2-methylnaphthalene	mg/kg	0.1	-	-	-	-
1-methylnaphthalene	mg/kg	0.1	-	-	-	-
Acenaphthylene	mg/kg	0.1	-	-	-	-
Acenaphthene	mg/kg	0.1	-	-	-	-
Fluorene	mg/kg	0.1	-	-	-	-
Phenanthrene	mg/kg	0.1	-	-	-	-
Anthracene	mg/kg	0.1	-	-	-	-
Fluoranthene	mg/kg	0.1	-	-	-	-
Pyrene	mg/kg	0.1	-	-	-	-
Benzo(a)anthracene	mg/kg	0.1	-	-	-	-
Chrysene	mg/kg	0.1	-	-	-	-
Benzo(b&j)fluoranthene	mg/kg	0.1	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.1	-	-	-	-
Benzo(a)pyrene	mg/kg	0.1	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	-	-	-	-
Dibenzo(ah)anthracene	mg/kg	0.1	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.1	-	-	-	-
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	-	-	-	-
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	-	-	-	-
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	-	-	-	-
Total PAH (18)	mg/kg	0.8	-	-	-	-
Total PAH (NEPM/WHO 16)	mg/kg	0.8	-	-	-	-
Surrogates						
d5-nitrobenzene (Surrogate)	%	-	-	-	-	-
2-fluorobiphenyl (Surrogate)	%	-	-	-	-	-
d14-p-terphenyl (Surrogate)	%	-	-	-	-	-
Speciated Phenols in Soil Method: AN420 Tested: 10/6/2020						
Phenol	mg/kg	0.5	-	-	-	-
2-methyl phenol (o-cresol)	mg/kg	0.5	-	-	-	-
3/4-methyl phenol (m/p-cresol)	mg/kg	1	-	-	-	-
Total Cresol	mg/kg	1.5	-	-	-	-
2-chlorophenol	mg/kg	0.5	-	-	-	-
2,4-dimethylphenol	mg/kg	0.5	-	-	-	-
2,6-dichlorophenol	mg/kg	0.5	-	-	-	-
2,4-dichlorophenol	mg/kg	0.5	-	-	-	-
2,4,6-trichlorophenol	mg/kg	0.5	-	-	-	-
2-nitrophenol	mg/kg	0.5	-	-	-	-
4-nitrophenol	mg/kg	1	-	-	-	-
2,4,5-trichlorophenol	mg/kg	0.5	-	-	-	-
2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	-	-	-	-
Pentachlorophenol	mg/kg	0.5	-	-	-	-
2,4-dinitrophenol	mg/kg	2	-	-	-	-
4-chloro-3-methylphenol	mg/kg	2	-	-	-	-

Parameter	Units	LOR	Sample Number SE207037.009 Sample Matrix Soil Sample Date 02 Jun 2020 Sample Name F2A	SE207037.010 Soil 02 Jun 2020 F3A	SE207037.011 Soil 02 Jun 2020 Trip Spike	SE207037.012 Soil 02 Jun 2020 Trip Blank
Speciated Phenols in Soil Method: AN420 Tested: 5/6/2020 (continued)						
Surrogates						
2,4,6-Tribromophenol (Surrogate)	%	-	-	-	-	-
d5-phenol (Surrogate)	%	-	-	-	-	-
OC Pesticides in Soil Method: AN420 Tested: 10/6/2020						
Hexachlorobenzene (HCB)	mg/kg	0.1	-	-	-	-
Alpha BHC	mg/kg	0.1	-	-	-	-
Lindane	mg/kg	0.1	-	-	-	-
Heptachlor	mg/kg	0.1	-	-	-	-
Aldrin	mg/kg	0.1	-	-	-	-
Beta BHC	mg/kg	0.1	-	-	-	-
Delta BHC	mg/kg	0.1	-	-	-	-
Heptachlor epoxide	mg/kg	0.1	-	-	-	-
o,p'-DDE	mg/kg	0.1	-	-	-	-
Alpha Endosulfan	mg/kg	0.2	-	-	-	-
Gamma Chlordane	mg/kg	0.1	-	-	-	-
Alpha Chlordane	mg/kg	0.1	-	-	-	-
trans-Nonachlor	mg/kg	0.1	-	-	-	-
p,p'-DDE	mg/kg	0.1	-	-	-	-
Dieldrin	mg/kg	0.2	-	-	-	-
Endrin	mg/kg	0.2	-	-	-	-
o,p'-DDD	mg/kg	0.1	-	-	-	-
o,p'-DDT	mg/kg	0.1	-	-	-	-
Beta Endosulfan	mg/kg	0.2	-	-	-	-
p,p'-DDD	mg/kg	0.1	-	-	-	-
p,p'-DDT	mg/kg	0.1	-	-	-	-
Endosulfan sulphate	mg/kg	0.1	-	-	-	-
Endrin Aldehyde	mg/kg	0.1	-	-	-	-
Methoxychlor	mg/kg	0.1	-	-	-	-
Endrin Ketone	mg/kg	0.1	-	-	-	-
Isodrin	mg/kg	0.1	-	-	-	-
Mirex	mg/kg	0.1	-	-	-	-
Total CLP OC Pesticides	mg/kg	1	-	-	-	-
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	-	-	-	-
OP Pesticides in Soil Method: AN420 Tested: 10/6/2020						
Dichlorvos	mg/kg	0.5	-	-	-	-
Dimethoate	mg/kg	0.5	-	-	-	-
Diazinon (Dimpylate)	mg/kg	0.5	-	-	-	-
Fenitrothion	mg/kg	0.2	-	-	-	-
Malathion	mg/kg	0.2	-	-	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	-	-	-	-
Parathion-ethyl (Parathion)	mg/kg	0.2	-	-	-	-
Bromophos Ethyl	mg/kg	0.2	-	-	-	-
Methidathion	mg/kg	0.5	-	-	-	-
Ethion	mg/kg	0.2	-	-	-	-
Azinphos-methyl (Guthion)	mg/kg	0.2	-	-	-	-
Total OP Pesticides*	mg/kg	1.7	-	-	-	-
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	-	-	-	-
d14-p-terphenyl (Surrogate)	%	-	-	-	-	-

Parameter	Units	Sample Number Sample Matrix Sample Date Sample Name LOR	SE207037.009 Soil 02 Jun 2020 F2A	SE207037.010 Soil 02 Jun 2020 F3A	SE207037.011 Soil 02 Jun 2020 Trip Spike	SE207037.012 Soil 02 Jun 2020 Trip Blank
PCBs in Soil Method: AN420 Tested: 10/6/2020						
Arochlor 1016	mg/kg	0.2	-	-	-	-
Arochlor 1221	mg/kg	0.2	-	-	-	-
Arochlor 1232	mg/kg	0.2	-	-	-	-
Arochlor 1242	mg/kg	0.2	-	-	-	-
Arochlor 1248	mg/kg	0.2	-	-	-	-
Arochlor 1254	mg/kg	0.2	-	-	-	-
Arochlor 1260	mg/kg	0.2	-	-	-	-
Arochlor 1262	mg/kg	0.2	-	-	-	-
Arochlor 1268	mg/kg	0.2	-	-	-	-
Total PCBs (Arochlors)	mg/kg	1	-	-	-	-
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	-	-	-	-
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 9/6/2020						
Arsenic, As	mg/kg	1	-	-	-	-
Cadmium, Cd	mg/kg	0.3	-	-	-	-
Chromium, Cr	mg/kg	0.5	-	-	-	-
Copper, Cu	mg/kg	0.5	-	-	-	-
Nickel, Ni	mg/kg	0.5	-	-	-	-
Lead, Pb	mg/kg	1	-	-	-	-
Zinc, Zn	mg/kg	2	-	-	-	-
Mercury in Soil Method: AN312 Tested: 10/6/2020						
Mercury	mg/kg	0.05	-	-	-	-
Moisture Content Method: AN002 Tested: 9/6/2020						
% Moisture	%w/w	1	-	-	-	<1.0
Fibre Identification in soil Method: AN602 Tested: 9/6/2020						
FibreID						
Asbestos Detected	No unit	-	No	No	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE207037.009 Soil 02 Jun 2020 F2A	SE207037.010 Soil 02 Jun 2020 F3A	SE207037.011 Soil 02 Jun 2020 Trip Spike	SE207037.012 Soil 02 Jun 2020 Trip Blank
Fibre Identification in soil Method: AN602 Tested: 9/6/2020 (continued)						
SemiQuant						
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	-	-

Parameter	Units	LOR	Sample Number SE207037.013 Sample Matrix Soil Sample Date 02 Jun 2020 Sample Name D3
VOC's in Soil Method: AN433 Tested: 5/6/2020			
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)	%	-	**114**
d8-toluene (Surrogate)	%	-	**110**
Bromofluorobenzene (Surrogate)	%	-	**89**
Totals			
Total Xylenes	mg/kg	0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6
Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 5/6/2020			
TRH C6-C10	mg/kg	25	<25
TRH C6-C9	mg/kg	20	<20
Surrogates			
d4-1,2-dichloroethane (Surrogate)	%	-	**114**
d8-toluene (Surrogate)	%	-	**110**
Bromofluorobenzene (Surrogate)	%	-	**89**

Parameter	Units	LOR	Sample Number: SE207037.013 Sample Matrix: Soil Sample Date: 02 Jun 2020 Sample Name: D3
Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 5/6/2020 (continued)			
VPH F Bands			
Benzene (F0)	mg/kg	0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 5/6/2020			
TRH C10-C14	mg/kg	20	<20
TRH C15-C28	mg/kg	45	**520**
TRH C29-C36	mg/kg	45	**680**
TRH C37-C40	mg/kg	100	**210**
TRH C10-C36 Total	mg/kg	110	**1200**
TRH >C10-C40 Total (F bands)	mg/kg	210	**1400**
TRH F Bands			
TRH >C10-C16	mg/kg	25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25
TRH >C16-C34 (F3)	mg/kg	90	**1000**
TRH >C34-C40 (F4)	mg/kg	120	**400**
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 5/6/2020			
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

Parameter	Units	LOR	Sample Number SE207037.013 Sample Matrix Soil Sample Date 02 Jun 2020 Sample Name D3
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 5/6/2020 (continued)			
Surrogates			
d5-nitrobenzene (Surrogate)	%	-	**107**
2-fluorobiphenyl (Surrogate)	%	-	**108**
d14-p-terphenyl (Surrogate)	%	-	**113**
Speciated Phenols in Soil Method: AN420 Tested: 5/6/2020			
Phenol	mg/kg	0.5	<0.5
2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5
3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1
Total Cresol	mg/kg	1.5	<1.5
2-chlorophenol	mg/kg	0.5	<0.5
2,4-dimethylphenol	mg/kg	0.5	<0.5
2,6-dichlorophenol	mg/kg	0.5	<0.5
2,4-dichlorophenol	mg/kg	0.5	<0.5
2,4,6-trichlorophenol	mg/kg	0.5	<0.5
2-nitrophenol	mg/kg	0.5	<0.5
4-nitrophenol	mg/kg	1	<1
2,4,5-trichlorophenol	mg/kg	0.5	<0.5
2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1
Pentachlorophenol	mg/kg	0.5	<0.5
2,4-dinitrophenol	mg/kg	2	<2
4-chloro-3-methylphenol	mg/kg	2	<2
Surrogates			
2,4,6-Tribromophenol (Surrogate)	%	-	**94**
d5-phenol (Surrogate)	%	-	**87**
OC Pesticides in Soil Method: AN420 Tested: 5/6/2020			
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1
Lindane	mg/kg	0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1
Aldrin	mg/kg	0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2
Endrin	mg/kg	0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1
Isodrin	mg/kg	0.1	<0.1
Mirex	mg/kg	0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1

Parameter	Units	LOR	Sample Number SE207037.013 Sample Matrix Soil Sample Date 02 Jun 2020 Sample Name D3
OC Pesticides in Soil Method: AN420 Tested: 5/6/2020 (continued)			
Surrogates			
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**105**
OP Pesticides in Soil Method: AN420 Tested: 5/6/2020			
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
Total OP Pesticides*	mg/kg	1.7	<1.7
Surrogates			
2-fluorobiphenyl (Surrogate)	%	-	**108**
d14-p-terphenyl (Surrogate)	%	-	**113**
PCBs in Soil Method: AN420 Tested: 5/6/2020			
Arochlor 1016	mg/kg	0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1

Parameter	Units	LOR	Sample Number SE207037.013 Sample Matrix Soil Sample Date 02 Jun 2020 Sample Name D3
PCBs in Soil Method: AN420 Tested: 5/6/2020 (continued)			
Surrogates			
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**105**
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 5/6/2020			
Arsenic, As	mg/kg	1	**3**
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.5	**24**
Copper, Cu	mg/kg	0.5	**18**
Nickel, Ni	mg/kg	0.5	**16**
Lead, Pb	mg/kg	1	**20**
Zinc, Zn	mg/kg	2	**71**
Mercury in Soil Method: AN312 Tested: 5/6/2020			
Mercury	mg/kg	0.05	<0.05
Moisture Content Method: AN002 Tested: 5/6/2020			
% Moisture	%w/w	1	**10.4**
Fibre Identification in soil Method: AN602 Tested: 10/6/2020			
FibreID			
Asbestos Detected	No unit	-	-
SemiQuant			
Estimated Fibres*	%w/w	0.01	-

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Mercury in Soil Method: ME-(AU)-[ENV]AN312

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB201387	mg/kg	0.05	<0.05	0%	122%	115%

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

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB201313	%w/w	1	8 - 17%

OC Pesticides in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery	MS %Recovery
Hexachlorobenzene (HCB)	LB201305	mg/kg	0.1	<0.1	NA	NA
Alpha BHC	LB201305	mg/kg	0.1	<0.1	NA	NA
Lindane	LB201305	mg/kg	0.1	<0.1	NA	NA
Heptachlor	LB201305	mg/kg	0.1	<0.1	93%	118%
Aldrin	LB201305	mg/kg	0.1	<0.1	93%	111%
Beta BHC	LB201305	mg/kg	0.1	<0.1	NA	NA
Delta BHC	LB201305	mg/kg	0.1	<0.1	90%	110%
Heptachlor epoxide	LB201305	mg/kg	0.1	<0.1	NA	NA
o,p'-DDE	LB201305	mg/kg	0.1	<0.1	NA	NA
Alpha Endosulfan	LB201305	mg/kg	0.2	<0.2	NA	NA
Gamma Chlordane	LB201305	mg/kg	0.1	<0.1	NA	NA
Alpha Chlordane	LB201305	mg/kg	0.1	<0.1	NA	NA
trans-Nonachlor	LB201305	mg/kg	0.1	<0.1	NA	NA
p,p'-DDE	LB201305	mg/kg	0.1	<0.1	NA	NA
Dieldrin	LB201305	mg/kg	0.2	<0.2	89%	277%
Endrin	LB201305	mg/kg	0.2	<0.2	89%	116%
o,p'-DDD	LB201305	mg/kg	0.1	<0.1	NA	NA
o,p'-DDT	LB201305	mg/kg	0.1	<0.1	NA	NA
Beta Endosulfan	LB201305	mg/kg	0.2	<0.2	NA	NA
p,p'-DDD	LB201305	mg/kg	0.1	<0.1	NA	NA
p,p'-DDT	LB201305	mg/kg	0.1	<0.1	74%	73%
Endosulfan sulphate	LB201305	mg/kg	0.1	<0.1	NA	NA
Endrin Aldehyde	LB201305	mg/kg	0.1	<0.1	NA	NA
Methoxychlor	LB201305	mg/kg	0.1	<0.1	NA	NA
Endrin Ketone	LB201305	mg/kg	0.1	<0.1	NA	NA
Isodrin	LB201305	mg/kg	0.1	<0.1	NA	NA
Mirex	LB201305	mg/kg	0.1	<0.1	NA	NA
Total CLP OC Pesticides	LB201305	mg/kg	1	<1	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery	MS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB201305	%	-	95%	95%	100%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

OP Pesticides in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dichlorvos	LB201305	mg/kg	0.5	<0.5	0%	66%	74%
Dimethoate	LB201305	mg/kg	0.5	<0.5	0%	NA	NA
Diazinon (Dimpylate)	LB201305	mg/kg	0.5	<0.5	0%	100%	102%
Fenitrothion	LB201305	mg/kg	0.2	<0.2	0%	NA	NA
Malathion	LB201305	mg/kg	0.2	<0.2	0%	NA	NA
Chlorpyrifos (Chlorpyrifos Ethyl)	LB201305	mg/kg	0.2	<0.2	0%	97%	105%
Parathion-ethyl (Parathion)	LB201305	mg/kg	0.2	<0.2	0%	NA	NA
Bromophos Ethyl	LB201305	mg/kg	0.2	<0.2	0%	NA	NA
Methidathion	LB201305	mg/kg	0.5	<0.5	0%	NA	NA
Ethion	LB201305	mg/kg	0.2	<0.2	0%	81%	89%
Azinphos-methyl (Guthion)	LB201305	mg/kg	0.2	<0.2	0%	NA	NA
Total OP Pesticides*	LB201305	mg/kg	1.7	<1.7	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
2-fluorobiphenyl (Surrogate)	LB201305	%	-	98%	5%	96%	95%
d14-p-terphenyl (Surrogate)	LB201305	%	-	92%	1%	91%	99%

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB201305	mg/kg	0.1	<0.1	0%	114%	124%
2-methylnaphthalene	LB201305	mg/kg	0.1	<0.1	0%	NA	NA
1-methylnaphthalene	LB201305	mg/kg	0.1	<0.1	0%	NA	NA
Acenaphthylene	LB201305	mg/kg	0.1	<0.1	0%	112%	123%
Acenaphthene	LB201305	mg/kg	0.1	<0.1	0%	124%	127%
Fluorene	LB201305	mg/kg	0.1	<0.1	0%	NA	NA
Phenanthrene	LB201305	mg/kg	0.1	<0.1	0%	119%	125%
Anthracene	LB201305	mg/kg	0.1	<0.1	0%	116%	123%
Fluoranthene	LB201305	mg/kg	0.1	<0.1	16%	118%	130%
Pyrene	LB201305	mg/kg	0.1	<0.1	30%	127%	135%
Benzo(a)anthracene	LB201305	mg/kg	0.1	<0.1	0%	NA	NA
Chrysene	LB201305	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(b&j)fluoranthene	LB201305	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(k)fluoranthene	LB201305	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(a)pyrene	LB201305	mg/kg	0.1	<0.1	0%	119%	128%
Indeno(1,2,3-cd)pyrene	LB201305	mg/kg	0.1	<0.1	0%	NA	NA
Dibenzo(ah)anthracene	LB201305	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(ghi)perylene	LB201305	mg/kg	0.1	<0.1	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=0	LB201305	TEQ (mg/kg)	0.2	<0.2	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR	LB201305	TEQ (mg/kg)	0.3	<0.3	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	LB201305	TEQ (mg/kg)	0.2	<0.2	0%	NA	NA
Total PAH (18)	LB201305	mg/kg	0.8	<0.8	0%	NA	NA
Total PAH (NEPM/WHO 16)	LB201305	mg/kg	0.8	<0.8			

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d5-nitrobenzene (Surrogate)	LB201305	%	-	95%	6%	90%	99%
2-fluorobiphenyl (Surrogate)	LB201305	%	-	98%	5%	96%	95%
d14-p-terphenyl (Surrogate)	LB201305	%	-	92%	1%	91%	99%

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

PCBs in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arochlor 1016	LB201305	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1221	LB201305	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1232	LB201305	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1242	LB201305	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1248	LB201305	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1254	LB201305	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1260	LB201305	mg/kg	0.2	<0.2	0%	91%	104%
Arochlor 1262	LB201305	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1268	LB201305	mg/kg	0.2	<0.2	0%	NA	NA
Total PCBs (Arochlors)	LB201305	mg/kg	1	<1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB201305	%	-	95%	3%	85%	102%

Speciated Phenols in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Phenol	LB201305	mg/kg	0.5	<0.5	0%	96%
2-methyl phenol (o-cresol)	LB201305	mg/kg	0.5	<0.5	0%	NA
3/4-methyl phenol (m/p-cresol)	LB201305	mg/kg	1	<1	0%	NA
Total Cresol	LB201305	mg/kg	1.5	<1.5	0%	NA
2-chlorophenol	LB201305	mg/kg	0.5	<0.5	0%	NA
2,4-dimethylphenol	LB201305	mg/kg	0.5	<0.5	0%	NA
2,6-dichlorophenol	LB201305	mg/kg	0.5	<0.5	0%	NA
2,4-dichlorophenol	LB201305	mg/kg	0.5	<0.5	0%	108%
2,4,6-trichlorophenol	LB201305	mg/kg	0.5	<0.5	0%	77%
2-nitrophenol	LB201305	mg/kg	0.5	<0.5	0%	NA
4-nitrophenol	LB201305	mg/kg	1	<1	0%	NA
2,4,5-trichlorophenol	LB201305	mg/kg	0.5	<0.5	0%	NA
2,3,4,6/2,3,5,6-tetrachlorophenol	LB201305	mg/kg	1	<1	0%	NA
Pentachlorophenol	LB201305	mg/kg	0.5	<0.5	0%	85%
2,4-dinitrophenol	LB201305	mg/kg	2	<2	0%	NA
4-chloro-3-methylphenol	LB201305	mg/kg	2	<2	0%	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
2,4,6-Tribromophenol (Surrogate)	LB201305	%	-	88%	0%	88%
d5-phenol (Surrogate)	LB201305	%	-	92%	1%	88%

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: ME-(AU)-[ENV]AN040/AN320

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB201371	mg/kg	1	<1	1 - 44%	105%	100%
Cadmium, Cd	LB201371	mg/kg	0.3	<0.3	0%	101%	91%
Chromium, Cr	LB201371	mg/kg	0.5	<0.5	7 - 27%	104%	100%
Copper, Cu	LB201371	mg/kg	0.5	<0.5	6 - 9%	102%	94%
Nickel, Ni	LB201371	mg/kg	0.5	<0.5	0 - 18%	100%	102%
Lead, Pb	LB201371	mg/kg	1	<1	15 - 86%	102%	96%
Zinc, Zn	LB201371	mg/kg	2	<2.0	19 - 32%	100%	108%

TRH (Total Recoverable Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN403

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C10-C14	LB201305	mg/kg	20	<20	0%	93%	105%
TRH C15-C28	LB201305	mg/kg	45	<45	0 - 17%	98%	108%
TRH C29-C36	LB201305	mg/kg	45	<45	0 - 12%	75%	83%
TRH C37-C40	LB201305	mg/kg	100	<100	0 - 3%	NA	NA
TRH C10-C36 Total	LB201305	mg/kg	110	<110	0 - 14%	NA	NA
TRH >C10-C40 Total (F bands)	LB201305	mg/kg	210	<210	0 - 12%	NA	NA

TRH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH >C10-C16	LB201305	mg/kg	25	<25	0%	100%	103%
TRH >C10-C16 - Naphthalene (F2)	LB201305	mg/kg	25	<25	0%	NA	NA
TRH >C16-C34 (F3)	LB201305	mg/kg	90	<90	0 - 15%	93%	105%
TRH >C34-C40 (F4)	LB201305	mg/kg	120	<120	0 - 5%	75%	NA

VOC's in Soil Method: ME-(AU)-[ENV]AN433

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene	LB201295	mg/kg	0.1	<0.1	0%	85%	82%
Toluene	LB201295	mg/kg	0.1	<0.1	0%	86%	80%
Ethylbenzene	LB201295	mg/kg	0.1	<0.1	0%	84%	80%
m/p-xylene	LB201295	mg/kg	0.2	<0.2	0%	84%	81%
o-xylene	LB201295	mg/kg	0.1	<0.1	0%	82%	79%

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB201295	mg/kg	0.1	<0.1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB201295	%	-	115%	4 - 11%	119%	113%
d8-toluene (Surrogate)	LB201295	%	-	109%	3 - 11%	117%	109%
Bromofluorobenzene (Surrogate)	LB201295	%	-	99%	2 - 11%	107%	100%

Totals

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Total Xylenes	LB201295	mg/kg	0.3	<0.3	0%	NA	NA
Total BTEX	LB201295	mg/kg	0.6	<0.6	0%	NA	NA

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Volatile Petroleum Hydrocarbons in Soil Method: ME-(AU)-[ENV]AN433

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C6-C10	LB201295	mg/kg	25	<25	0%	88%	82%
TRH C6-C9	LB201295	mg/kg	20	<20	0%	93%	85%

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB201295	%	-	115%	4 - 11%	119%	113%
d8-toluene (Surrogate)	LB201295	%	-	109%	3 - 11%	117%	109%
Bromofluorobenzene (Surrogate)	LB201295	%	-	99%	2 - 11%	107%	100%

VPH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene (F0)	LB201295	mg/kg	0.1	<0.1	0%	NA	NA
TRH C6-C10 minus BTEX (F1)	LB201295	mg/kg	25	<25	0%	90%	82%

METHOD SUMMARY

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

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
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

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

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

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

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

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

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

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

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

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

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Craig Wellings	Manager	Huong Crawford
Client	EHO CONSULTING PTY LIMITED	Laboratory	SGS Alexandria Environmental
Address	16/380 PENNANT HILLS ROAD PENNANT HILLS NSW 2120	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	(Not specified)	Telephone	+61 2 8594 0400
Facsimile	(Not specified)	Facsimile	+61 2 8594 0499
Email	craig@ehoc.com.au	Email	au.environmental.sydney@sgs.com
Project	**JN869**	SGS Reference	**SE207037 R0**
Order Number	(Not specified)	Date Received	02 Jun 2020
Samples	5	Date Reported	10 Jun 2020

COMMENTS

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

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

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

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

[redacted]

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Organic Chemist/Metals Chemis

Kamrul AHSAN
Senior Chemist

[redacted]

Ly Kim HA
Organic Section Head

Yusuf KUTHPUDIN
Asbestos Analyst

RESULTS

Fibre Identification in soil Method **AN602**

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE207037.006	G1A	Soil	103g Sand, Soil, Rocks, Plant matter	02 Jun 2020	No Asbestos Found Organic Fibres Detected	<0.01
SE207037.007	G2A	Soil	151g Sand, Soil, Plant matter	02 Jun 2020	No Asbestos Found Organic Fibres Detected	<0.01
SE207037.008	F1A	Soil	120g Clay, Sand, Soil, Rocks	02 Jun 2020	No Asbestos Found Organic Fibres Detected	<0.01
SE207037.009	F2A	Soil	209g Sand, Soil, Rocks	02 Jun 2020	No Asbestos Found Organic Fibres Detected	<0.01
SE207037.010	F3A	Soil	211g Sand, Soil, Rocks	02 Jun 2020	No Asbestos Found Organic Fibres Detected	<0.01

METHOD SUMMARY

SE207037 R0

METHOD	METHODOLOGY SUMMARY
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples , Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection 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/en-gb/environment-health-and-safety.

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Appendix F – Chain of Custody Records

SGS

CHAIN OF CUSTODY & ANALYSIS REQUEST

Page 1 of 1

SGS Environmental Services
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Telephone No: (02) 85940400
Facsimile No: (02) 85940499
Email: au.samplereceipt.sydney@sgs.com

Company Name:	EHO Consulting Pty Ltd	Project Name/No:	KINGSWOOD / JN005869
Address:	16/380 Pennant Hills Rd, Pennant Hills NSW 2120	Purchase Order No:	-
		Results Required By:	Std T/A
		Telephone:	0491 231 187
Contact Name:	Craig Wellings	Facsimile:	-
		Email Results:	craig@ehoc.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CLS Soil Custom Suite	Asbestos - wt% + ID.
S1	10/9/19	1		✓		2	✓	✓
S2	"	2		✓		2	✓	✓
S3	"	3		✓		2	✓	✓

SGS EHS Alexandria Laboratory

SE197563 COC
Received: 12 – Sep – 2019

Relinquished By: C WELLINGS	Date/Time: 10/9/19 10.30	Received By:	Date/Time 12/09/19 @ 9.20
Relinquished By:	Date/Time:	Received By:	Date/Time
Samples Intact: (Yes) / No	Temperature: Ambient / (Chilled)	Sample Cooler Sealed: Yes/ No	Laboratory Quotation No:
	Comments:		

CHAIN OF CUSTODY & ANALYSIS REQUEST

Page 1 of 1

SGS Environmental Services
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Telephone No: (02) 85940400
Facsimile No: (02) 85940499
Email:
au.samplereceipt.sydney@sgs.com

Company	EHO Consulting Pty Ltd	Project Name/No:	KINGSWOOD / JN00864
Address:	16/380 Pennant Hills Rd, Pennant Hills NSW 2120	Purchase Order No:	
		Results Required By:	Standard turnaround
		Telephone:	0491 231 182
Contact Name:	Craig Wellings	Facsimile:	-
		Email Results:	craig@ehoc.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CL IS Contam Suite	Asbestos ID + % w/w
BH4	10/2/20	1		X			X	X
BH5	"	2		X			X	X
BH6	"	3		X			X	X
DUPLICATE	"	4		X			X	
		5						

202552

Relinquished By: C-WELLINGS	Date/Time: 10/2/20 14:30	Received By:	Date/Time
Relinquished By:	Date/Time:	Received By: DINESH.N	Date/Time 10/02/2020 1448
Samples Intact: Yes/No	Temperature: Ambient / Chilled	Sample Cooler Sealed: Yes/No	Laboratory Quotation No:
	Comments:		

SGS

CHAIN OF CUSTODY & ANALYSIS REQUEST

SGS Environmental Services
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Telephone No: (02) 85940400
Facsimile No: (02) 85940499
Email:
au.samplereceipt.sydney@sgs.com

Company	EHO Consulting Pty Ltd	Project Name/No:	JN869
Address:	16/380 Pennant Hills Rd, Pennant Hills NSW 2120	Purchase Order No:	EHO C_EHS_46199 Pricelist
		Results Required By:	Standard turnaround
		Telephone:	0491 231 182
Contact Name:	Craig Wellings	Facsimile:	-
		Email Results:	craig@ehoc.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CL15 Contam suite	Asbestos in soil	VOCs
G1		1		X		1	X		
G2		2		X		1	X		
F1		3		X		1	X		
F2		4		X		1	X		
F3		5		X		1	X		
G1A		6		X		1		X	
G2A		7		X		1		X	
F1A		8		X		1		X	
F2A		9		X		1		X	
F3A		10		X		1		X	
Trip Spike		11		X		1			X
Trip Blank		12		X		1	X		
D3		13		X		1	X		

SGS EHS Sydney COC
SE207037

Relinquished By: E.Gibney	Date/Time: 2/6/20 14:30	Received By:	Date/Time 03/06/20 @ 3:15
Relinquished By:	Date/Time:	Received By:	Date/Time
Samples Intact: (Yes) No	Temperature: Ambient / (Chilled)	Sample Cooler Sealed: Yes/ No	Laboratory Quotation No:
	Comments:		

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E-MAILED 3/6/20 8:05

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Appendix G – Laboratory QA/QC Reports

STATEMENT OF QA/QC PERFORMANCE

SE197563 R0

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Craig Wellings	Manager	Huong Crawford
Client	EHO CONSULTING PTY LIMITED	Laboratory	SGS Alexandria Environmental
Address	16/380 PENNANT HILLS ROAD PENNANT HILLS NSW 2120	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	(Not specified)	Telephone	+61 2 8594 0400
Facsimile	(Not specified)	Facsimile	+61 2 8594 0499
Email	craig@ehoc.com.au	Email	au.environmental.sydney@sgs.com
Project	**JN00869 - Kingswood**	SGS Reference	**SE197563 R0**
Order Number	(Not specified)	Date Received	12 Sep 2019
Samples	3	Date Reported	19 Sep 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:

Surrogate	VOC's in Soil	1 item
	Volatile Petroleum Hydrocarbons in Soil	1 item
Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	4 items

SAMPLE SUMMARY

HOLDING TIME SUMMARY

SE197563 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.

Fibre Identification in soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE197563.001	LB183441	10 Sep 2019	12 Sep 2019	09 Sep 2020	18 Sep 2019	09 Sep 2020	19 Sep 2019
S2	SE197563.002	LB183441	10 Sep 2019	12 Sep 2019	09 Sep 2020	18 Sep 2019	09 Sep 2020	19 Sep 2019
S3	SE197563.003	LB183441	10 Sep 2019	12 Sep 2019	09 Sep 2020	18 Sep 2019	09 Sep 2020	19 Sep 2019

Gravimetric Determination of Asbestos in Soil

Method: ME-(AU)-[ENV]AN605

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE197563.001	LB183441	10 Sep 2019	12 Sep 2019	08 Mar 2020	18 Sep 2019	08 Mar 2020	19 Sep 2019
S2	SE197563.002	LB183441	10 Sep 2019	12 Sep 2019	08 Mar 2020	18 Sep 2019	08 Mar 2020	19 Sep 2019
S3	SE197563.003	LB183441	10 Sep 2019	12 Sep 2019	08 Mar 2020	18 Sep 2019	08 Mar 2020	19 Sep 2019

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE197563.001	LB183251	10 Sep 2019	12 Sep 2019	08 Oct 2019	16 Sep 2019	08 Oct 2019	18 Sep 2019
S2	SE197563.002	LB183251	10 Sep 2019	12 Sep 2019	08 Oct 2019	16 Sep 2019	08 Oct 2019	18 Sep 2019
S3	SE197563.003	LB183251	10 Sep 2019	12 Sep 2019	08 Oct 2019	16 Sep 2019	08 Oct 2019	18 Sep 2019

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE197563.001	LB183142	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	18 Sep 2019	18 Sep 2019
S2	SE197563.002	LB183142	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	18 Sep 2019	18 Sep 2019
S3	SE197563.003	LB183142	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	18 Sep 2019	18 Sep 2019

OC Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE197563.001	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	19 Sep 2019
S2	SE197563.002	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	19 Sep 2019
S3	SE197563.003	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	19 Sep 2019

OP Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE197563.001	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 2019
S2	SE197563.002	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 2019
S3	SE197563.003	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	19 Sep 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
S1	SE197563.001	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 2019
S2	SE197563.002	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 2019
S3	SE197563.003	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	19 Sep 2019

PCBs in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE197563.001	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	19 Sep 2019
S2	SE197563.002	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	19 Sep 2019
S3	SE197563.003	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	19 Sep 2019

Speciated Phenols in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE197563.001	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 2019
S2	SE197563.002	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 2019
S3	SE197563.003	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 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
S1	SE197563.001	LB183250	10 Sep 2019	12 Sep 2019	08 Mar 2020	16 Sep 2019	08 Mar 2020	18 Sep 2019
S2	SE197563.002	LB183250	10 Sep 2019	12 Sep 2019	08 Mar 2020	16 Sep 2019	08 Mar 2020	18 Sep 2019
S3	SE197563.003	LB183250	10 Sep 2019	12 Sep 2019	08 Mar 2020	16 Sep 2019	08 Mar 2020	18 Sep 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
S1	SE197563.001	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 2019
S2	SE197563.002	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 2019
S3	SE197563.003	LB183140	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	19 Sep 2019

HOLDING TIME SUMMARY

SE197563 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 — Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE197563.001	LB183139	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 2019
S2	SE197563.002	LB183139	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 2019
S3	SE197563.003	LB183139	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 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
S1	SE197563.001	LB183139	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 2019
S2	SE197563.002	LB183139	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 2019
S3	SE197563.003	LB183139	10 Sep 2019	12 Sep 2019	24 Sep 2019	13 Sep 2019	23 Oct 2019	18 Sep 2019

SURROGATES

SE197563 R0

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)	S1	SE197563.001	%	60 - 130%	73
	S2	SE197563.002	%	60 - 130%	73
	S3	SE197563.003	%	60 - 130%	70

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	S1	SE197563.001	%	60 - 130%	84
	S2	SE197563.002	%	60 - 130%	86
	S3	SE197563.003	%	60 - 130%	84
d14-p-terphenyl (Surrogate)	S1	SE197563.001	%	60 - 130%	88
	S2	SE197563.002	%	60 - 130%	88
	S3	SE197563.003	%	60 - 130%	86

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	S1	SE197563.001	%	70 - 130%	84
	S2	SE197563.002	%	70 - 130%	86
	S3	SE197563.003	%	70 - 130%	84
d14-p-terphenyl (Surrogate)	S1	SE197563.001	%	70 - 130%	88
	S2	SE197563.002	%	70 - 130%	88
	S3	SE197563.003	%	70 - 130%	86
d5-nitrobenzene (Surrogate)	S1	SE197563.001	%	70 - 130%	86
	S2	SE197563.002	%	70 - 130%	88
	S3	SE197563.003	%	70 - 130%	88

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	S1	SE197563.001	%	60 - 130%	73
	S2	SE197563.002	%	60 - 130%	73
	S3	SE197563.003	%	60 - 130%	70

Speciated Phenols in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2,4,6-Tribromophenol (Surrogate)	S1	SE197563.001	%	70 - 130%	91
	S2	SE197563.002	%	70 - 130%	92
	S3	SE197563.003	%	70 - 130%	96
d5-phenol (Surrogate)	S1	SE197563.001	%	50 - 130%	102
	S2	SE197563.002	%	50 - 130%	102
	S3	SE197563.003	%	50 - 130%	102

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	S1	SE197563.001	%	60 - 130%	105
	S2	SE197563.002	%	60 - 130%	104
	S3	SE197563.003	%	60 - 130%	103
d4-1,2-dichloroethane (Surrogate)	S1	SE197563.001	%	60 - 130%	97
	S2	SE197563.002	%	60 - 130%	103
	S3	SE197563.003	%	60 - 130%	96
d8-toluene (Surrogate)	S1	SE197563.001	%	60 - 130%	130
	S2	SE197563.002	%	60 - 130%	129
	S3	SE197563.003	%	60 - 130%	130

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	S1	SE197563.001	%	60 - 130%	105
	S2	SE197563.002	%	60 - 130%	104
	S3	SE197563.003	%	60 - 130%	103
d4-1,2-dichloroethane (Surrogate)	S1	SE197563.001	%	60 - 130%	97
	S2	SE197563.002	%	60 - 130%	103
	S3	SE197563.003	%	60 - 130%	96
d8-toluene (Surrogate)	S1	SE197563.001	%	60 - 130%	130
	S2	SE197563.002	%	60 - 130%	129
	S3	SE197563.003	%	60 - 130%	130

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

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

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB183251.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB183140.001		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)	%	-	81

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB183140.001		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)	%	-	94
		d14-p-terphenyl (Surrogate)	%	-	98

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB183140.001	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

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB183140.001		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	100
		2-fluorobiphenyl (Surrogate)	%	-	94
		d14-p-terphenyl (Surrogate)	%	-	98

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB183140.001		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)	%	-	81

Speciated Phenols in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB183140.001		Phenol	mg/kg	0.5	<0.5
		2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5
		3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1
		2-chlorophenol	mg/kg	0.5	<0.5
		2,4-dimethylphenol	mg/kg	0.5	<0.5
		2,6-dichlorophenol	mg/kg	0.5	<0.5
		2,4-dichlorophenol	mg/kg	0.5	<0.5
		2,4,6-trichlorophenol	mg/kg	0.5	<0.5
		2-nitrophenol	mg/kg	0.5	<0.5
		4-nitrophenol	mg/kg	1	<1
		2,4,5-trichlorophenol	mg/kg	0.5	<0.5
		2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1
		Pentachlorophenol	mg/kg	0.5	<0.5
		2,4-dinitrophenol	mg/kg	2	<2
		4-chloro-3-methylphenol	mg/kg	2	<2
	Surrogates	2,4,6-Tribromophenol (Surrogate)	%	-	71
		d5-phenol (Surrogate)	%	-	108

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB183250.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB183140.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR

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

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

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB183139.001	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)	%	-	101
		d8-toluene (Surrogate)	%	-	100
		Bromofluorobenzene (Surrogate)	%	-	104
	Totals	Total BTEX	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB183139.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	101

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

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

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

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

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE197565.003	LB183251.014	Mercury	mg/kg	0.05	<0.05	<0.05	135	0

Moisture Content — Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE197577.002	LB183142.011	% Moisture	%w/w	1	24.119633381	24.888558692	34	3
SE197637.008	LB183142.021	% Moisture	%w/w	1	0.54824561	400.0842459983	200	0

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE197577.002	LB183140.026		Hexachlorobenzene (HCB)	mg/kg	0.1	0	0	200	0
			Alpha BHC	mg/kg	0.1	0	0	200	0
			Lindane	mg/kg	0.1	0	0	200	0
			Heptachlor	mg/kg	0.1	0	0	200	0
			Aldrin	mg/kg	0.1	0	0	200	0
			Beta BHC	mg/kg	0.1	0	0	200	0
			Delta BHC	mg/kg	0.1	0	0	200	0
			Heptachlor epoxide	mg/kg	0.1	0	0	200	0
			o,p'-DDE	mg/kg	0.1	0	0	200	0
			Alpha Endosulfan	mg/kg	0.2	0	0	200	0
			Gamma Chlordane	mg/kg	0.1	0	0	200	0
			Alpha Chlordane	mg/kg	0.1	0	0	200	0
			trans-Nonachlor	mg/kg	0.1	0	0	200	0
			p,p'-DDE	mg/kg	0.1	0	0	200	0
			Dieldrin	mg/kg	0.2	0	0	200	0
			Endrin	mg/kg	0.2	0	0	200	0
			o,p'-DDD	mg/kg	0.1	0	0	200	0
			o,p'-DDT	mg/kg	0.1	0	0	200	0
			Beta Endosulfan	mg/kg	0.2	0	0	200	0
			p,p'-DDD	mg/kg	0.1	0	0	200	0
			p,p'-DDT	mg/kg	0.1	0	0	200	0
			Endosulfan sulphate	mg/kg	0.1	0	0	200	0
			Endrin Aldehyde	mg/kg	0.1	0	0	200	0
			Methoxychlor	mg/kg	0.1	0	0	200	0
			Endrin Ketone	mg/kg	0.1	0	0	200	0
			Isodrin	mg/kg	0.1	0	0	200	0
			Mirex	mg/kg	0.1	0	0	200	0
			Total CLP OC Pesticides	mg/kg	1	0	0	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.125	0.121	30	3

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE197577.002	LB183140.026		Dichlorvos	mg/kg	0.5	0	0	200	0
			Dimethoate	mg/kg	0.5	0	0	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	0	0	200	0
			Fenitrothion	mg/kg	0.2	0	0	200	0
			Malathion	mg/kg	0.2	0	0	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	0	0	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	0	0	200	0
			Bromophos Ethyl	mg/kg	0.2	0	0	200	0
			Methidathion	mg/kg	0.5	0	0	200	0
			Ethion	mg/kg	0.2	0.07	0	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	0	0	200	0
			Total OP Pesticides*	mg/kg	1.7	0	0	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.42	0.43	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.45	0.44	30	2
SE197637.004	LB183140.027		Dichlorvos	mg/kg	0.5	0	0	200	0
			Dimethoate	mg/kg	0.5	0	0	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	0	0	200	0

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

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

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

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

OP Pesticides in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE197637.004	LB183140.027		Fenitrothion	mg/kg	0.2	0.03	0.03	200	0
			Malathion	mg/kg	0.2	0	0	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	0	0	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	0	0	200	0
			Bromophos Ethyl	mg/kg	0.2	0.02	0.02	200	0
			Methidathion	mg/kg	0.5	0	0	200	0
			Ethion	mg/kg	0.2	0	0	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	0	0	200	0
			Total OP Pesticides*	mg/kg	1.7	0	0	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.42	0.41	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.44	0.43	30	2

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE197577.002	LB183140.026		Naphthalene	mg/kg	0.1	0.02	0.02	200	0
			2-methylnaphthalene	mg/kg	0.1	0.02	0.02	200	0
			1-methylnaphthalene	mg/kg	0.1	0.02	0.02	200	0
			Acenaphthylene	mg/kg	0.1	0.03	0.11	173	10
			Acenaphthene	mg/kg	0.1	0	0	200	0
			Fluorene	mg/kg	0.1	0	0.03	200	0
			Phenanthrene	mg/kg	0.1	0.19	0.55	57	97 ⑨
			Anthracene	mg/kg	0.1	0.04	0.13	148	26
			Fluoranthene	mg/kg	0.1	0.42	0.98	44	80 ⑨
			Pyrene	mg/kg	0.1	0.47	0.93	44	66 ⑨
			Benzo(a)anthracene	mg/kg	0.1	0.29	0.49	56	51
			Chrysene	mg/kg	0.1	0.3	0.46	56	42
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.32	0.43	57	29
			Benzo(k)fluoranthene	mg/kg	0.1	0.22	0.3	68	31
			Benzo(a)pyrene	mg/kg	0.1	0.32	0.43	57	29
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.21	0.28	71	29
			Dibenzo(ah)anthracene	mg/kg	0.1	0.03	0.04	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.21	0.24	74	13
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	0.4291	0.587	49	31
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	0.5291	0.687	59	26
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	0.4791	0.637	46	28
			Total PAH (18)	mg/kg	0.8	2.95	5.33	49	57 ⑨
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.46	0.45	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.42	0.43	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.45	0.44	30	2
SE197637.004	LB183140.027		Naphthalene	mg/kg	0.1	0.15	0.14	99	7
			2-methylnaphthalene	mg/kg	0.1	0.06	0.06	197	0
			1-methylnaphthalene	mg/kg	0.1	0.06	0.06	197	0
			Acenaphthylene	mg/kg	0.1	0.47	0.33	55	35
			Acenaphthene	mg/kg	0.1	0.04	0.18	121	57
			Fluorene	mg/kg	0.1	0.29	0.31	63	7
			Phenanthrene	mg/kg	0.1	6.97	7.45	31	7
			Anthracene	mg/kg	0.1	1.4	1.36	37	3
			Fluoranthene	mg/kg	0.1	7.79	9.01	31	15
			Pyrene	mg/kg	0.1	7.75	8.04	31	4
			Benzo(a)anthracene	mg/kg	0.1	3.55	3.71	33	4
			Chrysene	mg/kg	0.1	3.58	3.7	33	3
			Benzo(b&j)fluoranthene	mg/kg	0.1	3.26	3.35	33	3
			Benzo(k)fluoranthene	mg/kg	0.1	1.66	1.8	36	8
			Benzo(a)pyrene	mg/kg	0.1	3.34	3.25	33	3
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	1.8	1.81	36	1
			Dibenzo(ah)anthracene	mg/kg	0.1	0.29	0.29	64	0
			Benzo(ghi)perylene	mg/kg	0.1	1.52	1.54	37	1
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	4.709	4.6574	14	1
				TEQ (mg/kg)	0.2	4.709	4.6574	14	1
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	4.709	4.6574	16	1
				TEQ (mg/kg)	0.3	4.709	4.6574	16	1

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 %
SE197637.004	LB183140.027		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	4.709	4.6574	14	1
				TEQ (mg/kg)	0.2	4.709	4.6574	14	1
			Total PAH (18)	mg/kg	0.8	43.83	46.25	32	5
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.44	0.4	30	10
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.42	0.41	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.44	0.43	30	2

PCBs in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE197577.002	LB183140.024		Arochlor 1016	mg/kg	0.2	0	0	200	0
			Arochlor 1221	mg/kg	0.2	0	0	200	0
			Arochlor 1232	mg/kg	0.2	0	0	200	0
			Arochlor 1242	mg/kg	0.2	0	0	200	0
			Arochlor 1248	mg/kg	0.2	0	0	200	0
			Arochlor 1254	mg/kg	0.2	0	0	200	0
			Arochlor 1260	mg/kg	0.2	0	0	200	0
			Arochlor 1262	mg/kg	0.2	0	0	200	0
			Arochlor 1268	mg/kg	0.2	0	0	200	0
			Total PCBs (Arochlors)	mg/kg	1	0	0	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.125	0.121	30	3

Speciated Phenols in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE197564.019	LB183140.024		Phenol	mg/kg	0.5	0.01	0.01	200	0
			2-methyl phenol (o-cresol)	mg/kg	0.5	0	0	200	0
			3/4-methyl phenol (m/p-cresol)	mg/kg	1	0	0	200	0
			Total Cresol	mg/kg	1.5	0	0	200	0
			2-chlorophenol	mg/kg	0.5	0	0	200	0
			2,4-dimethylphenol	mg/kg	0.5	0	0	200	0
			2,6-dichlorophenol	mg/kg	0.5	0	0	200	0
			2,4-dichlorophenol	mg/kg	0.5	0	0	200	0
			2,4,6-trichlorophenol	mg/kg	0.5	0	0	200	0
			2-nitrophenol	mg/kg	0.5	0	0	200	0
			4-nitrophenol	mg/kg	1	0.03	0.02	200	0
			2,4,5-trichlorophenol	mg/kg	0.5	0	0	200	0
			2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	0	0	200	0
			Pentachlorophenol	mg/kg	0.5	0	0	200	0
			2,4-dinitrophenol	mg/kg	2	0	0	200	0
			4-chloro-3-methylphenol	mg/kg	2	0	0	200	0
		Surrogates	2,4,6-Tribromophenol (Surrogate)	mg/kg	-	4.58	4.51	30	2
			d5-phenol (Surrogate)	mg/kg	-	2.04	1.97	30	3

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 %
SE197565.003	LB183250.023		Arsenic, As	mg/kg	1	2	3	68	15
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.5	8.5	8.5	36	1
			Copper, Cu	mg/kg	0.5	6.0	6.4	38	7
			Nickel, Ni	mg/kg	0.5	1.2	1.1	75	11
			Lead, Pb	mg/kg	1	43	44	32	3
			Zinc, Zn	mg/kg	2	26	28	37	10

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE197577.002	LB183140.014		TRH C10-C14	mg/kg	20	0	0	200	0
			TRH C15-C28	mg/kg	45	0	0	200	0
			TRH C29-C36	mg/kg	45	0	0	200	0
			TRH C37-C40	mg/kg	100	0	0	200	0
			TRH C10-C36 Total	mg/kg	110	0	0	200	0
			TRH C10-C40 Total (F bands)	mg/kg	210	0	0	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	0	0	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	0	0	200	0

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

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

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

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE197577.002	LB183140.014	TRH F Bands	TRH >C34-C40 (F4)	mg/kg	120	0	0	200	0
SE197637.004	LB183140.025		TRH C10-C14	mg/kg	20	0	0	200	0
			TRH C15-C28	mg/kg	45	89	70	87	24
			TRH C29-C36	mg/kg	45	0	0	200	0
			TRH C37-C40	mg/kg	100	0	0	200	0
			TRH C10-C36 Total	mg/kg	110	89	70	168	0
			TRH C10-C40 Total (F bands)	mg/kg	210	120	92	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	0	0	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	120	92	115	26
			TRH >C34-C40 (F4)	mg/kg	120	0	0	200	0

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE197577.002	LB183139.014	Monocyclic	Benzene	mg/kg	0.1	0	0	200	0
		Aromatic	Toluene	mg/kg	0.1	0.00391381320.0036884095		200	0
			Ethylbenzene	mg/kg	0.1	0.00133779580.0011755883		200	0
			m/p-xylene	mg/kg	0.2	0.00416360940.0035251405		200	0
			o-xylene	mg/kg	0.1	0.00151275450.0011565500		200	0
		Polycyclic	Naphthalene	mg/kg	0.1	0.00614555410.0053972455		200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.72663415888.3985879016		50	8
			d8-toluene (Surrogate)	mg/kg	-	7.15320644888.0472071327		50	12
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.49050050867.9970174773		50	7
		Totals	Total Xylenes	mg/kg	0.3	0.00567636390.0046816905		200	0
			Total BTEX	mg/kg	0.6	0.01092797300.0095456884		200	0
SE197637.007	LB183139.026	Monocyclic	Benzene	mg/kg	0.1	0.0018	0.0014	200	0
		Aromatic	Toluene	mg/kg	0.1	0.00454984530.0032529998		200	0
			Ethylbenzene	mg/kg	0.1	0.00092918220.0007292359		200	0
			m/p-xylene	mg/kg	0.2	0.00346493220.0023416678		200	0
			o-xylene	mg/kg	0.1	0.00153992570.0009898504		200	0
		Polycyclic	Naphthalene	mg/kg	0.1	0.03597178240.0071301447		200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.76294361139.1042375347		50	4
			d8-toluene (Surrogate)	mg/kg	-	8.96990352811 1.1824724252		50	22
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.52855065249.4046924593		50	10
		Totals	Total Xylenes	mg/kg	0.3	0.00500485800.0033315183		200	0
			Total BTEX	mg/kg	0.6	0.01228388560.0087137541		200	0

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE197577.002	LB183139.014		TRH C6-C10	mg/kg	25	0	0	200	0
			TRH C6-C9	mg/kg	20	0	0	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.72663415888.3985879016		30	8
			d8-toluene (Surrogate)	mg/kg	-	7.15320644888.0472071327		30	12
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.49050050867.9970174773		30	7
		VPH F Bands	Benzene (F0)	mg/kg	0.1	0	0	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	-0.01092797300.0095456884		200	0
SE197637.007	LB183139.026		TRH C6-C10	mg/kg	25	0	0	200	0
			TRH C6-C9	mg/kg	20	0	0	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.76294361139.1042375347		30	4
			d8-toluene (Surrogate)	mg/kg	-	8.96990352811 1.1824724252		30	22
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.52855065249.4046924593		30	10
		VPH F Bands	Benzene (F0)	mg/kg	0.1	0.0018	0.0014	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	-0.01228388560.0087137541		200	0

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

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

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB183251.002	Mercury	mg/kg	0.05	0.19	0.2	70 - 130	97

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB183140.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	118
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	123
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	111
		Dieldrin	mg/kg	0.2	0.2	0.2	60 - 140	122
		Endrin	mg/kg	0.2	0.2	0.2	60 - 140	117
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	109
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	87

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB183140.002		Dichlorvos	mg/kg	0.5	1.6	2	60 - 140	78
		Diazinon (Dimpylate)	mg/kg	0.5	1.8	2	60 - 140	88
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	88
		Ethion	mg/kg	0.2	1.6	2	60 - 140	78
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	90

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB183140.002		Naphthalene	mg/kg	0.1	4.2	4	60 - 140	104
		Acenaphthylene	mg/kg	0.1	4.2	4	60 - 140	104
		Acenaphthene	mg/kg	0.1	4.3	4	60 - 140	107
		Phenanthrene	mg/kg	0.1	4.3	4	60 - 140	107
		Anthracene	mg/kg	0.1	4.2	4	60 - 140	106
		Fluoranthene	mg/kg	0.1	4.1	4	60 - 140	101
		Pyrene	mg/kg	0.1	4.2	4	60 - 140	106
		Benzo(a)pyrene	mg/kg	0.1	4.4	4	60 - 140	109
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	90

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB183140.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	95

Speciated Phenols in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB183140.002		Phenol	mg/kg	0.5	1.0	1	70 - 130	100
		2,4-dichlorophenol	mg/kg	0.5	1.1	1	70 - 130	112
		2,4,6-trichlorophenol	mg/kg	0.5	0.9	1	70 - 130	86
		Pentachlorophenol	mg/kg	0.5	0.8	1	70 - 130	77
	Surrogates	2,4,6-Tribromophenol (Surrogate)	mg/kg	-	3.5	5	40 - 130	71
		d5-phenol (Surrogate)	mg/kg	-	2.1	2	40 - 130	107

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 %
LB183250.002	Arsenic, As	mg/kg	1	320	318.22	80 - 120	101
	Cadmium, Cd	mg/kg	0.3	5.3	4.62	80 - 120	115
	Chromium, Cr	mg/kg	0.5	38	38.31	80 - 120	99
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	104
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	102
	Lead, Pb	mg/kg	1	94	89.9	80 - 120	105
	Zinc, Zn	mg/kg	2	280	273	80 - 120	102

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR

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

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB183140.002		TRH C10-C14	mg/kg	20	35	40	60 - 140	88
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	78
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	75
	TRH F Bands	TRH >C10-C16	mg/kg	25	34	40	60 - 140	85
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	75
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	80

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB183139.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.5	5	60 - 140	90
		Toluene	mg/kg	0.1	4.4	5	60 - 140	89
		Ethylbenzene	mg/kg	0.1	4.6	5	60 - 140	93
		m/p-xylene	mg/kg	0.2	8.9	10	60 - 140	89
		o-xylene	mg/kg	0.1	4.4	5	60 - 140	88
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.3	10	70 - 130	93
		d8-toluene (Surrogate)	mg/kg	-	8.4	10	70 - 130	84
		Bromofluorobenzene (Surrogate)	mg/kg	-	8.8	10	70 - 130	88

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB183139.002		TRH C6-C10	mg/kg	25	80	92.5	60 - 140	86
		TRH C6-C9	mg/kg	20	66	80	60 - 140	82
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.3	10	70 - 130	93
		Bromofluorobenzene (Surrogate)	mg/kg	-	8.8	10	70 - 130	88
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	53	62.5	60 - 140	85

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%
SE197671.001	LB183251.004	Mercury	mg/kg	0.05	0.19	<0.05	0.2	96

OC Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE197563.001	LB183140.004		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	105
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	104
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	97
			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	104
			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	105
			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	-	0.11	0.11	-	74

OP Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE197563.001	LB183140.004		Dichlorvos	mg/kg	0.5	1.6	<0.5	2	82
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Diazinon (Dimpylate)	mg/kg	0.5	1.9	<0.5	2	93
			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	93
			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	1.7	<0.2	2	83
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	7.0	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	84
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4	-	90

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE197563.001	LB183140.004	Naphthalene	mg/kg	0.1	4.1	<0.1	4	102
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	4.0	<0.1	4	100
		Acenaphthene	mg/kg	0.1	4.4	<0.1	4	109
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	4.4	0.1	4	108

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%
SE197563.001	LB183140.004		Anthracene	mg/kg	0.1	4.2	<0.1	4	104
			Fluoranthene	mg/kg	0.1	4.3	0.2	4	103
			Pyrene	mg/kg	0.1	4.4	0.2	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	4.4	0.1	4	106
			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	4.4	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	4.5	<0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	4.4	<0.2	-	-
			Total PAH (18)	mg/kg	0.8	34	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	-	84
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	84
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4	-	90

PCBs in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE197563.001	LB183140.004		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	93
			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	-	75

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%
SE197671.001	LB183250.004		Arsenic, As	mg/kg	1	49	<1	50	96
			Cadmium, Cd	mg/kg	0.3	44	<0.3	50	88
			Chromium, Cr	mg/kg	0.5	51	<0.5	50	100
			Copper, Cu	mg/kg	0.5	50	0.6	50	98
			Nickel, Ni	mg/kg	0.5	50	<0.5	50	99
			Lead, Pb	mg/kg	1	51	3	50	97
			Zinc, Zn	mg/kg	2	55	12	50	87

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE197563.001	LB183140.024		TRH C10-C14	mg/kg	20	40	<20	40	85
			TRH C15-C28	mg/kg	45	100	57	40	108
			TRH C29-C36	mg/kg	45	71	46	40	63
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	210	<110	-	-
			TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F Bands	TRH >C10-C16	mg/kg	25	38	<25	40	75
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	38	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	130	<90	40	105
			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%
SE197563.001	LB183139.004	Monocyclic	Benzene	mg/kg	0.1	4.2	<0.1	5	84
		Aromatic	Toluene	mg/kg	0.1	5.1	<0.1	5	102
			Ethylbenzene	mg/kg	0.1	4.4	<0.1	5	88
			m/p-xylene	mg/kg	0.2	8.7	<0.2	10	87
			o-xylene	mg/kg	0.1	4.2	<0.1	5	85

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

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

VOC's in Soil (continued) — Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE197563.001	LB183139.004	Polycyclic	Naphthalene	mg/kg	0.1	4.4	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.3	9.7	10	83
			d8-toluene (Surrogate)	mg/kg	-	9.6	13.0	10	96
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.3	10.5	10	83
		Totals	Total Xylenes	mg/kg	0.3	13	<0.3	-	-
			Total BTEX	mg/kg	0.6	27	<0.6	-	-

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE197563.001	LB183139.004		TRH C6-C10	mg/kg	25	90	<25	92.5	97
			TRH C6-C9	mg/kg	20	72	<20	80	90
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.3	9.7	10	83
			d8-toluene (Surrogate)	mg/kg	-	9.6	13.0	10	96
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.3	10.5	-	83
		VPH F	Benzene (F0)	mg/kg	0.1	4.2	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	63	<25	62.5	101

MATRIX SPIKE DUPLICATES

SE197563 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.

STATEMENT OF QA/QC PERFORMANCE

SE202652 R0

CLIENT DETAILS

Contact	Craig Wellings
Client	EHO CONSULTING PTY LIMITED
Address	16/380 PENNANT HILLS ROAD PENNANT HILLS NSW 2120
Telephone	(Not specified)
Facsimile	(Not specified)
Email	craig@ehoc.com.au
Project	**JN00869 Kingswood**
Order Number	(Not specified)
Samples	4

LABORATORY DETAILS

Manager	Huong Crawford
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SGS Reference	**SE202652 R0**
Date Received	10 Feb 2020
Date Reported	14 Feb 2020

COMMENTS

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

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

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

Duplicate	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items

SAMPLE SUMMARY

HOLDING TIME SUMMARY

SE202652 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.

Fibre Identification in soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4	SE202652.001	LB192893	10 Feb 2020	10 Feb 2020	09 Feb 2021	13 Feb 2020	09 Feb 2021	14 Feb 2020
BH5	SE202652.002	LB192893	10 Feb 2020	10 Feb 2020	09 Feb 2021	13 Feb 2020	09 Feb 2021	14 Feb 2020
BH6	SE202652.003	LB192893	10 Feb 2020	10 Feb 2020	09 Feb 2021	13 Feb 2020	09 Feb 2021	14 Feb 2020

Gravimetric Determination of Asbestos in Soil

Method: ME-(AU)-[ENV]AN605

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4	SE202652.001	LB192893	10 Feb 2020	10 Feb 2020	08 Aug 2020	13 Feb 2020	08 Aug 2020	14 Feb 2020
BH5	SE202652.002	LB192893	10 Feb 2020	10 Feb 2020	08 Aug 2020	13 Feb 2020	08 Aug 2020	14 Feb 2020
BH6	SE202652.003	LB192893	10 Feb 2020	10 Feb 2020	08 Aug 2020	13 Feb 2020	08 Aug 2020	14 Feb 2020

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4	SE202652.001	LB192765	10 Feb 2020	10 Feb 2020	09 Mar 2020	11 Feb 2020	09 Mar 2020	12 Feb 2020
BH5	SE202652.002	LB192765	10 Feb 2020	10 Feb 2020	09 Mar 2020	11 Feb 2020	09 Mar 2020	12 Feb 2020
BH6	SE202652.003	LB192765	10 Feb 2020	10 Feb 2020	09 Mar 2020	11 Feb 2020	09 Mar 2020	12 Feb 2020
DUPLICATE	SE202652.004	LB192765	10 Feb 2020	10 Feb 2020	09 Mar 2020	11 Feb 2020	09 Mar 2020	12 Feb 2020

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4	SE202652.001	LB192755	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	16 Feb 2020	12 Feb 2020
BH5	SE202652.002	LB192755	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	16 Feb 2020	12 Feb 2020
BH6	SE202652.003	LB192755	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	16 Feb 2020	12 Feb 2020
DUPLICATE	SE202652.004	LB192755	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	16 Feb 2020	12 Feb 2020

OC Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4	SE202652.001	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
BH5	SE202652.002	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
BH6	SE202652.003	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
DUPLICATE	SE202652.004	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020

OP Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4	SE202652.001	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
BH5	SE202652.002	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
BH6	SE202652.003	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
DUPLICATE	SE202652.004	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020

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
BH4	SE202652.001	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
BH5	SE202652.002	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
BH6	SE202652.003	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
DUPLICATE	SE202652.004	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020

PCBs in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4	SE202652.001	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
BH5	SE202652.002	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
BH6	SE202652.003	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
DUPLICATE	SE202652.004	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020

Speciated Phenols in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4	SE202652.001	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	14 Feb 2020
BH5	SE202652.002	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	14 Feb 2020
BH6	SE202652.003	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	14 Feb 2020
DUPLICATE	SE202652.004	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	14 Feb 2020

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4	SE202652.001	LB192764	10 Feb 2020	10 Feb 2020	08 Aug 2020	11 Feb 2020	08 Aug 2020	14 Feb 2020
BH5	SE202652.002	LB192764	10 Feb 2020	10 Feb 2020	08 Aug 2020	11 Feb 2020	08 Aug 2020	14 Feb 2020
BH6	SE202652.003	LB192764	10 Feb 2020	10 Feb 2020	08 Aug 2020	11 Feb 2020	08 Aug 2020	14 Feb 2020

HOLDING TIME SUMMARY

SE202652 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
DUPLICATE	SE202652.004	LB192764	10 Feb 2020	10 Feb 2020	08 Aug 2020	11 Feb 2020	08 Aug 2020	14 Feb 2020

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4	SE202652.001	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
BH5	SE202652.002	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
BH6	SE202652.003	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
DUPLICATE	SE202652.004	LB192754	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4	SE202652.001	LB192753	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
BH5	SE202652.002	LB192753	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
BH6	SE202652.003	LB192753	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
DUPLICATE	SE202652.004	LB192753	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4	SE202652.001	LB192753	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
BH5	SE202652.002	LB192753	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
BH6	SE202652.003	LB192753	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020
DUPLICATE	SE202652.004	LB192753	10 Feb 2020	10 Feb 2020	24 Feb 2020	11 Feb 2020	22 Mar 2020	13 Feb 2020

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

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

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH4	SE202652.001	%	60 - 130%	126
	BH5	SE202652.002	%	60 - 130%	118
	BH6	SE202652.003	%	60 - 130%	124
	DUPLICATE	SE202652.004	%	60 - 130%	122

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH4	SE202652.001	%	60 - 130%	88
	BH5	SE202652.002	%	60 - 130%	84
	BH6	SE202652.003	%	60 - 130%	92
	DUPLICATE	SE202652.004	%	60 - 130%	88
d14-p-terphenyl (Surrogate)	BH4	SE202652.001	%	60 - 130%	88
	BH5	SE202652.002	%	60 - 130%	88
	BH6	SE202652.003	%	60 - 130%	88
	DUPLICATE	SE202652.004	%	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)	BH4	SE202652.001	%	70 - 130%	88
	BH5	SE202652.002	%	70 - 130%	84
	BH6	SE202652.003	%	70 - 130%	92
	DUPLICATE	SE202652.004	%	70 - 130%	88
d14-p-terphenyl (Surrogate)	BH4	SE202652.001	%	70 - 130%	88
	BH5	SE202652.002	%	70 - 130%	88
	BH6	SE202652.003	%	70 - 130%	88
	DUPLICATE	SE202652.004	%	70 - 130%	88
d5-nitrobenzene (Surrogate)	BH4	SE202652.001	%	70 - 130%	76
	BH5	SE202652.002	%	70 - 130%	70
	BH6	SE202652.003	%	70 - 130%	74
	DUPLICATE	SE202652.004	%	70 - 130%	74

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH4	SE202652.001	%	60 - 130%	126
	BH5	SE202652.002	%	60 - 130%	118
	BH6	SE202652.003	%	60 - 130%	124
	DUPLICATE	SE202652.004	%	60 - 130%	122

Speciated Phenols in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2,4,6-Tribromophenol (Surrogate)	BH4	SE202652.001	%	70 - 130%	125
	BH5	SE202652.002	%	70 - 130%	123
	BH6	SE202652.003	%	70 - 130%	120
	DUPLICATE	SE202652.004	%	70 - 130%	124
d5-phenol (Surrogate)	BH4	SE202652.001	%	50 - 130%	121
	BH5	SE202652.002	%	50 - 130%	123
	BH6	SE202652.003	%	50 - 130%	124
	DUPLICATE	SE202652.004	%	50 - 130%	125

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH4	SE202652.001	%	60 - 130%	102
	BH5	SE202652.002	%	60 - 130%	92
	BH6	SE202652.003	%	60 - 130%	93
	DUPLICATE	SE202652.004	%	60 - 130%	95
d4-1,2-dichloroethane (Surrogate)	BH4	SE202652.001	%	60 - 130%	118
	BH5	SE202652.002	%	60 - 130%	110
	BH6	SE202652.003	%	60 - 130%	115
	DUPLICATE	SE202652.004	%	60 - 130%	113
d8-toluene (Surrogate)	BH4	SE202652.001	%	60 - 130%	103
	BH5	SE202652.002	%	60 - 130%	95
	BH6	SE202652.003	%	60 - 130%	98
	DUPLICATE	SE202652.004	%	60 - 130%	96

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

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

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH4	SE202652.001	%	60 - 130%	102
	BH5	SE202652.002	%	60 - 130%	92
	BH6	SE202652.003	%	60 - 130%	93
	DUPLICATE	SE202652.004	%	60 - 130%	95
d4-1,2-dichloroethane (Surrogate)	BH4	SE202652.001	%	60 - 130%	118
	BH5	SE202652.002	%	60 - 130%	110
	BH6	SE202652.003	%	60 - 130%	115
	DUPLICATE	SE202652.004	%	60 - 130%	113
d8-toluene (Surrogate)	BH4	SE202652.001	%	60 - 130%	103
	BH5	SE202652.002	%	60 - 130%	95
	BH6	SE202652.003	%	60 - 130%	98
	DUPLICATE	SE202652.004	%	60 - 130%	96

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

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

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB192765.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB192754.001		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)	%	-	115

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB192754.001		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)	%	-	88
		d14-p-terphenyl (Surrogate)	%	-	86

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB192754.001	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

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB192754.001		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	84
		2-fluorobiphenyl (Surrogate)	%	-	88
		d14-p-terphenyl (Surrogate)	%	-	86

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB192754.001		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)	%	-	115

Speciated Phenols in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB192754.001		Phenol	mg/kg	0.5	<0.5
		2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5
		3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1
		2-chlorophenol	mg/kg	0.5	<0.5
		2,4-dimethylphenol	mg/kg	0.5	<0.5
		2,6-dichlorophenol	mg/kg	0.5	<0.5
		2,4-dichlorophenol	mg/kg	0.5	<0.5
		2,4,6-trichlorophenol	mg/kg	0.5	<0.5
		2-nitrophenol	mg/kg	0.5	<0.5
		4-nitrophenol	mg/kg	1	<1
		2,4,5-trichlorophenol	mg/kg	0.5	<0.5
		2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1
		Pentachlorophenol	mg/kg	0.5	<0.5
		2,4-dinitrophenol	mg/kg	2	<2
		4-chloro-3-methylphenol	mg/kg	2	<2
	Surrogates	2,4,6-Tribromophenol (Surrogate)	%	-	124
		d5-phenol (Surrogate)	%	-	117

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB192764.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB192754.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR

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

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

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB192753.001	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)	%	-	130
		d8-toluene (Surrogate)	%	-	115
		Bromofluorobenzene (Surrogate)	%	-	108
	Totals	Total BTEX	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB192753.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	130

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

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

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

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

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE202663.004	LB192765.023	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE202672.010	LB192765.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE202652.004	LB192755.011	% Moisture	%w/w	1	19.0	19.8	35	4
SE202661.006	LB192755.017	% Moisture	%w/w	1	0.41928721170.6134969325		200	0

OC Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE202651.006	LB192754.022		Hexachlorobenzene (HCB)	mg/kg	0.1	0	0	200	0
			Alpha BHC	mg/kg	0.1	0	0	200	0
			Lindane	mg/kg	0.1	0	0	200	0
			Heptachlor	mg/kg	0.1	0	0	200	0
			Aldrin	mg/kg	0.1	0	0	200	0
			Beta BHC	mg/kg	0.1	0	0	200	0
			Delta BHC	mg/kg	0.1	0	0	200	0
			Heptachlor epoxide	mg/kg	0.1	0	0	200	0
			o,p'-DDE	mg/kg	0.1	0	0	200	0
			Alpha Endosulfan	mg/kg	0.2	0	0	200	0
			Gamma Chlordane	mg/kg	0.1	0	0	200	0
			Alpha Chlordane	mg/kg	0.1	0	0	200	0
			trans-Nonachlor	mg/kg	0.1	0	0	200	0
			p,p'-DDE	mg/kg	0.1	0	0	200	0
			Dieldrin	mg/kg	0.2	0	0	200	0
			Endrin	mg/kg	0.2	0	0	200	0
			o,p'-DDD	mg/kg	0.1	0	0	200	0
			o,p'-DDT	mg/kg	0.1	0	0	200	0
			Beta Endosulfan	mg/kg	0.2	0	0	200	0
			p,p'-DDD	mg/kg	0.1	0	0	200	0
			p,p'-DDT	mg/kg	0.1	0	0	200	0
			Endosulfan sulphate	mg/kg	0.1	0	0	200	0
			Endrin Aldehyde	mg/kg	0.1	0	0	200	0
			Methoxychlor	mg/kg	0.1	0	0	200	0
			Endrin Ketone	mg/kg	0.1	0	0	200	0
			Isodrin	mg/kg	0.1	0	0	200	0
			Mirex	mg/kg	0.1	0	0	200	0
			Total CLP OC Pesticides	mg/kg	1	0	0	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.173	0.166	30	4

OP Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE202651.006	LB192754.022		Dichlorvos	mg/kg	0.5	0	0	200	0
			Dimethoate	mg/kg	0.5	0	0	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	0	0	200	0
			Fenitrothion	mg/kg	0.2	0	0	200	0
			Malathion	mg/kg	0.2	0	0	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	0	0	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	0	0	200	0
			Bromophos Ethyl	mg/kg	0.2	0	0	200	0
			Methidathion	mg/kg	0.5	0	0	200	0
			Ethion	mg/kg	0.2	0	0	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	0	0	200	0
			Total OP Pesticides*	mg/kg	1.7	0	0	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.45	0.44	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.43	0.43	30	0
SE202661.001	LB192754.023		Dichlorvos	mg/kg	0.5	0	0	200	0
			Dimethoate	mg/kg	0.5	0	0	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	0	0	200	0

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

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

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

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

OP Pesticides in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE202661.001	LB192754.023		Fenitrothion	mg/kg	0.2	0	0	200	0
			Malathion	mg/kg	0.2	0	0	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	0	0	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	0	0	200	0
			Bromophos Ethyl	mg/kg	0.2	0	0	200	0
			Methidathion	mg/kg	0.5	0	0	200	0
			Ethion	mg/kg	0.2	0	0	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	0	0	200	0
			Total OP Pesticides*	mg/kg	1.7	0	0	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.44	0.44	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.43	0.43	30	0

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE202651.006	LB192754.022		Naphthalene	mg/kg	0.1	0	0	200	0
			2-methylnaphthalene	mg/kg	0.1	0	0	200	0
			1-methylnaphthalene	mg/kg	0.1	0	0	200	0
			Acenaphthylene	mg/kg	0.1	0	0	200	0
			Acenaphthene	mg/kg	0.1	0	0	200	0
			Fluorene	mg/kg	0.1	0	0	200	0
			Phenanthrene	mg/kg	0.1	0.1	0.09	135	0
			Anthracene	mg/kg	0.1	0.02	0.02	200	0
			Fluoranthene	mg/kg	0.1	0.27	0.25	68	8
			Pyrene	mg/kg	0.1	0.29	0.28	65	4
			Benzo(a)anthracene	mg/kg	0.1	0.12	0.12	113	0
			Chrysene	mg/kg	0.1	0.14	0.13	104	7
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.15	0.15	97	0
			Benzo(k)fluoranthene	mg/kg	0.1	0.06	0.05	200	0
			Benzo(a)pyrene	mg/kg	0.1	0.15	0.15	97	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.09	0.09	141	0
			Dibenzo(ah)anthracene	mg/kg	0.1	0	0	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.1	0.1	130	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	0.1864	0.1853	118	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	0.2964	0.2953	111	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	0.2414	0.2403	93	0
			Total PAH (18)	mg/kg	0.8	1.39	1.24	91	11
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.37	0.37	30	0
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.45	0.44	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.43	0.43	30	0
SE202661.001	LB192754.023		Naphthalene	mg/kg	0.1	0	0	200	0
			2-methylnaphthalene	mg/kg	0.1	0	0	200	0
			1-methylnaphthalene	mg/kg	0.1	0	0	200	0
			Acenaphthylene	mg/kg	0.1	0	0	200	0
			Acenaphthene	mg/kg	0.1	0	0	200	0
			Fluorene	mg/kg	0.1	0	0	200	0
			Phenanthrene	mg/kg	0.1	0.08	0.09	148	0
			Anthracene	mg/kg	0.1	0.03	0.03	200	0
			Fluoranthene	mg/kg	0.1	0.11	0.13	113	17
			Pyrene	mg/kg	0.1	0.1	0.12	121	18
			Benzo(a)anthracene	mg/kg	0.1	0	0	200	0
			Chrysene	mg/kg	0.1	0	0	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	0	0.06	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	0	0.05	200	0
			Benzo(a)pyrene	mg/kg	0.1	0	0	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0	0	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	0	0	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0	0	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	0	0	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	0.242	0.242	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	0.121	0.121	175	0
			Total PAH (18)	mg/kg	0.8	0.21	0.25	200	0

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

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

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE202661.001	LB192754.023	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.36	0.36	30	0
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.44	0.44	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.43	0.43	30	0

PCBs in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE202651.006	LB192754.022		Arochlor 1016	mg/kg	0.2	0	0	200	0
			Arochlor 1221	mg/kg	0.2	0	0	200	0
			Arochlor 1232	mg/kg	0.2	0	0	200	0
			Arochlor 1242	mg/kg	0.2	0	0	200	0
			Arochlor 1248	mg/kg	0.2	0	0	200	0
			Arochlor 1254	mg/kg	0.2	0	0	200	0
			Arochlor 1260	mg/kg	0.2	0	0	200	0
			Arochlor 1262	mg/kg	0.2	0	0	200	0
			Arochlor 1268	mg/kg	0.2	0	0	200	0
			Total PCBs (Arochlors)	mg/kg	1	0	0	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.173	0.166	30	4

Speciated Phenols in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE202651.006	LB192754.025		Phenol	mg/kg	0.5	0.03	0.02	200	0
			2-methyl phenol (o-cresol)	mg/kg	0.5	0	0	200	0
			3/4-methyl phenol (m/p-cresol)	mg/kg	1	0	0	200	0
			Total Cresol	mg/kg	1.5	0	0	200	0
			2-chlorophenol	mg/kg	0.5	0	0	200	0
			2,4-dimethylphenol	mg/kg	0.5	0.06	0.03	200	0
			2,6-dichlorophenol	mg/kg	0.5	0	0	200	0
			2,4-dichlorophenol	mg/kg	0.5	0.03	0.02	200	0
			2,4,6-trichlorophenol	mg/kg	0.5	0	0	200	0
			2-nitrophenol	mg/kg	0.5	0	0	200	0
			4-nitrophenol	mg/kg	1	0	0	200	0
			2,4,5-trichlorophenol	mg/kg	0.5	0	0	200	0
			2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	0	0	200	0
			Pentachlorophenol	mg/kg	0.5	0	0	200	0
			2,4-dinitrophenol	mg/kg	2	0	0	200	0
			4-chloro-3-methylphenol	mg/kg	2	0	0	200	0
		Surrogates	2,4,6-Tribromophenol (Surrogate)	mg/kg	-	6.27	6.31	30	1
			d5-phenol (Surrogate)	mg/kg	-	2.43	2.51	30	3

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 %
SE202663.004	LB192764.023	Arsenic, As	mg/kg	1	13	15	37	11
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	5.4	5.0	40	9
		Copper, Cu	mg/kg	0.5	7.0	6.9	37	2
		Nickel, Ni	mg/kg	0.5	<0.5	<0.5	132	0
		Lead, Pb	mg/kg	1	6	6	47	6
		Zinc, Zn	mg/kg	2	3.3	3.1	93	7
SE202672.010	LB192764.014	Arsenic, As	mg/kg	1	1	3	76	101 ③
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	1.6	1.9	59	20
		Copper, Cu	mg/kg	0.5	<0.5	1.8	80	112 ②
		Nickel, Ni	mg/kg	0.5	<0.5	1.3	93	86
		Lead, Pb	mg/kg	1	1	2	100	41
		Zinc, Zn	mg/kg	2	5.9	8.2	58	33

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE202651.006	LB192754.022	TRH C10-C14	mg/kg	20	0	0	200	0
		TRH C15-C28	mg/kg	45	0	0	200	0
		TRH C29-C36	mg/kg	45	0	0	200	0
		TRH C37-C40	mg/kg	100	0	0	200	0
		TRH C10-C36 Total	mg/kg	110	0	0	200	0

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

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

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

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE202651.006	LB192754.022		TRH >C10-C40 Total (F bands)	mg/kg	210	0	0	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	0	0	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	0	0	200	0
			TRH >C34-C40 (F4)	mg/kg	120	0	0	200	0
SE202661.001	LB192754.023		TRH C10-C14	mg/kg	20	0	0	200	0
			TRH C15-C28	mg/kg	45	0	0	200	0
			TRH C29-C36	mg/kg	45	0	0	200	0
			TRH C37-C40	mg/kg	100	0	0	200	0
			TRH C10-C36 Total	mg/kg	110	0	0	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	0	0	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	0	0	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	0	0	200	0
			TRH >C34-C40 (F4)	mg/kg	120	0	0	200	0

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE202652.002	LB192753.014	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	-	11.0	12.1	50	9
			d8-toluene (Surrogate)	mg/kg	-	9.5	10.7	50	12
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.2	10.4	50	13
		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
SE202661.005	LB192753.024	Monocyclic	Benzene	mg/kg	0.1	0	0	200	0
		Aromatic	Toluene	mg/kg	0.1	0.0359005366	0.0336516186	200	0
			Ethylbenzene	mg/kg	0.1	0.0037441053	0.0030065733	200	0
			m/p-xylene	mg/kg	0.2	0.0191786749	0.0154602084	200	0
			o-xylene	mg/kg	0.1	0.0079808706	0.0066570382	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	0.0018427486	0.0010872563	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	13.6694432698	1.542632930	50	17
			d8-toluene (Surrogate)	mg/kg	-	11.9704095244	0.117362835	50	17
			Bromofluorobenzene (Surrogate)	mg/kg	-	11.4819573267	9.7836773302	50	16
		Totals	Total Xylenes	mg/kg	0.3	0.0271595455	0.0221172466	200	0
			Total BTEX	mg/kg	0.6	0	0	200	0

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE202652.002	LB192753.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.0	12.1	30	9
			d8-toluene (Surrogate)	mg/kg	-	9.5	10.7	30	12
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.2	10.4	30	13
		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
SE202661.005	LB192753.024		TRH C6-C10	mg/kg	25	0	0	200	0
			TRH C6-C9	mg/kg	20	0	0	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	13.6694432698	1.542632930	30	17
			d8-toluene (Surrogate)	mg/kg	-	11.9704095244	0.117362835	30	17
			Bromofluorobenzene (Surrogate)	mg/kg	-	11.4819573267	9.7836773302	30	16
		VPH F Bands	Benzene (F0)	mg/kg	0.1	0	0	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	0	0	200	0

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

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

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB192765.002	Mercury	mg/kg	0.05	0.23	0.2	70 - 130	113

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB192754.002		Heptachlor	mg/kg	0.1	0.1	0.2	60 - 140	72
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	93
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	90
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	85
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	79
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	80
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.15	40 - 130	109

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB192754.002		Dichlorvos	mg/kg	0.5	1.6	2	60 - 140	80
		Diazinon (Dimpylate)	mg/kg	0.5	1.6	2	60 - 140	80
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	91
		Ethion	mg/kg	0.2	1.4	2	60 - 140	72
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	86
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	78

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB192754.002		Naphthalene	mg/kg	0.1	3.6	4	60 - 140	90
		Acenaphthylene	mg/kg	0.1	4.1	4	60 - 140	102
		Acenaphthene	mg/kg	0.1	3.5	4	60 - 140	89
		Phenanthrene	mg/kg	0.1	3.6	4	60 - 140	89
		Anthracene	mg/kg	0.1	3.5	4	60 - 140	86
		Fluoranthene	mg/kg	0.1	3.5	4	60 - 140	88
		Pyrene	mg/kg	0.1	3.7	4	60 - 140	92
		Benzo(a)pyrene	mg/kg	0.1	4.0	4	60 - 140	100
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	78
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	86
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	78

PCBs in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB192754.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	110

Speciated Phenols in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB192754.002		Phenol	mg/kg	0.5	1.2	1	70 - 130	123
		2,4-dichlorophenol	mg/kg	0.5	1.0	1	70 - 130	102
		2,4,6-trichlorophenol	mg/kg	0.5	1.0	1	70 - 130	95
		Pentachlorophenol	mg/kg	0.5	0.9	1	70 - 130	87
	Surrogates	2,4,6-Tribromophenol (Surrogate)	mg/kg	-	6.0	5	40 - 130	120
		d5-phenol (Surrogate)	mg/kg	-	2.5	2	40 - 130	126

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 %
LB192764.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	109
	Cadmium, Cd	mg/kg	0.3	5.7	5.41	80 - 120	105
	Chromium, Cr	mg/kg	0.5	35	38.31	80 - 120	91
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	109
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	102
	Lead, Pb	mg/kg	1	100	89.9	80 - 120	115
	Zinc, Zn	mg/kg	2	300	273	80 - 120	111

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR

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

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB192754.002		TRH C10-C14	mg/kg	20	35	40	60 - 140	88
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	88
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	75
	TRH F Bands	TRH >C10-C16	mg/kg	25	35	40	60 - 140	88
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	88
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	90

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB192753.002	Monocyclic	Benzene	mg/kg	0.1	4.3	5	60 - 140	85
	Aromatic	Toluene	mg/kg	0.1	4.4	5	60 - 140	88
		Ethylbenzene	mg/kg	0.1	4.3	5	60 - 140	87
		m/p-xylene	mg/kg	0.2	8.7	10	60 - 140	87
		o-xylene	mg/kg	0.1	4.3	5	60 - 140	87
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.5	10	70 - 130	125
		d8-toluene (Surrogate)	mg/kg	-	11.4	10	70 - 130	114
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.6	10	70 - 130	106

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB192753.002		TRH C6-C10	mg/kg	25	86	92.5	60 - 140	93
		TRH C6-C9	mg/kg	20	76	80	60 - 140	95
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.5	10	70 - 130	125
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.6	10	70 - 130	106
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	60	62.5	60 - 140	96

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%
SE202672.001	LB192765.004	Mercury	mg/kg	0.05	0.20	<0.05	0.2	101

OC Pesticides in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE202649.001	LB192754.004	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	102
		Aldrin	mg/kg	0.1	0.2	<0.1	0.2	115
		Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	114
		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	108
		Endrin	mg/kg	0.2	0.2	<0.2	0.2	103
		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	85
		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	-	0.18	0.18	-	120

OP Pesticides in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE202649.001	LB192754.004	Dichlorvos	mg/kg	0.5	1.6	<0.5	2	80
		Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
		Diazinon (Dimpylate)	mg/kg	0.5	1.5	<0.5	2	77
		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	1.4	<0.2	2	70
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
		Total OP Pesticides*	mg/kg	1.7	6.1	<1.7	-	-
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	86
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	80

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE202649.001	LB192754.004	Naphthalene	mg/kg	0.1	3.6	<0.1	4	89
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	3.6	<0.1	4	89
		Acenaphthene	mg/kg	0.1	3.5	<0.1	4	88
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	3.5	<0.1	4	88

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%
SE202649.001	LB192754.004		Anthracene	mg/kg	0.1	3.4	<0.1	4	85
			Fluoranthene	mg/kg	0.1	3.5	<0.1	4	85
			Pyrene	mg/kg	0.1	3.7	<0.1	4	91
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	3.9	<0.1	4	97
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	3.9	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	4.0	<0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	4.0	<0.2	-	-
			Total PAH (18)	mg/kg	0.8	29	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	-	72
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	86
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	80

PCBs in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE202649.001	LB192754.004		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	121
			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	-	122

Speciated Phenols in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE202651.001	LB192754.024		Phenol	mg/kg	0.5	1.2	0	1	119
			2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5	0	-	-
			3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1	0	-	-
			Total Cresol	mg/kg	1.5	<1.5	0	-	-
			2-chlorophenol	mg/kg	0.5	<0.5	0	-	-
			2,4-dimethylphenol	mg/kg	0.5	<0.5	0	-	-
			2,6-dichlorophenol	mg/kg	0.5	<0.5	0	-	-
			2,4-dichlorophenol	mg/kg	0.5	1.0	0	1	100
			2,4,6-trichlorophenol	mg/kg	0.5	0.9	0	1	94
			2-nitrophenol	mg/kg	0.5	<0.5	0	-	-
			4-nitrophenol	mg/kg	1	<1	0	-	-
			2,4,5-trichlorophenol	mg/kg	0.5	0.8	0	-	-
			2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1	0	-	-
			Pentachlorophenol	mg/kg	0.5	0.8	0	1	81
			2,4-dinitrophenol	mg/kg	2	<2	0	-	-
			4-chloro-3-methylphenol	mg/kg	2	<2	0	-	-
		Surrogates	2,4,6-Tribromophenol (Surrogate)	mg/kg	-	6.4	5.71	-	128
			d5-phenol (Surrogate)	mg/kg	-	2.4	2.45	-	119

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%
SE202672.001	LB192764.004	Arsenic, As	mg/kg	1	53	<1	50	104
		Cadmium, Cd	mg/kg	0.3	45	<0.3	50	90
		Chromium, Cr	mg/kg	0.5	53	<0.5	50	106
		Copper, Cu	mg/kg	0.5	54	<0.5	50	109
		Nickel, Ni	mg/kg	0.5	53	<0.5	50	105
		Lead, Pb	mg/kg	1	54	<1	50	107

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%
SE202672.001	LB192764.004	Zinc, Zn	mg/kg	2	55	<2.0	50	110

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE202649.001	LB192754.004		TRH C10-C14	mg/kg	20	37	<20	40	93
			TRH C15-C28	mg/kg	45	<45	<45	40	95
			TRH C29-C36	mg/kg	45	<45	<45	40	68
			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	38	<25	40	95
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	38	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	95
			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%
SE202649.001	LB192753.004	Monocyclic	Benzene	mg/kg	0.1	4.0	<0.1	5	80
		Aromatic	Toluene	mg/kg	0.1	4.0	<0.1	5	80
			Ethylbenzene	mg/kg	0.1	4.1	<0.1	5	81
			m/p-xylene	mg/kg	0.2	8.2	<0.2	10	81
			o-xylene	mg/kg	0.1	4.1	<0.1	5	81
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.5	11.5	10	115
			d8-toluene (Surrogate)	mg/kg	-	10.0	10.0	10	100
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	9.5	10	94
		Totals	Total Xylenes	mg/kg	0.3	12	<0.3	-	-
			Total BTEX	mg/kg	0.6	24	<0.6	-	-

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE202649.001	LB192753.004		TRH C6-C10	mg/kg	25	77	<25	92.5	84
			TRH C6-C9	mg/kg	20	68	<20	80	86
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.5	11.5	10	115
			d8-toluene (Surrogate)	mg/kg	-	10.0	10.0	10	100
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	9.5	-	94
		VPH F	Benzene (F0)	mg/kg	0.1	4.0	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	53	<25	62.5	85

MATRIX SPIKE DUPLICATES

SE202652 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 relevant report comments for further information.

STATEMENT OF QA/QC PERFORMANCE

SE207037 R0

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Craig Wellings	Manager	Huong Crawford
Client	EHO CONSULTING PTY LIMITED	Laboratory	SGS Alexandria Environmental
Address	16/380 PENNANT HILLS ROAD PENNANT HILLS NSW 2120	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	(Not specified)	Telephone	+61 2 8594 0400
Facsimile	(Not specified)	Facsimile	+61 2 8594 0499
Email	craig@ehoc.com.au	Email	au.environmental.sydney@sgs.com
Project	**JN869**	SGS Reference	**SE207037 R0**
Order Number	(Not specified)	Date Received	02 Jun 2020
Samples	13	Date Reported	10 Jun 2020

COMMENTS

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

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

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

Duplicate	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
Matrix Spike	OC Pesticides in Soil	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	13 Soil
Date documentation received	3/6/2020@8:05am	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	5.0°C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

HOLDING TIME SUMMARY

SE207037 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.

Fibre Identification in soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
G1A	SE207037.006	LB201463	02 Jun 2020	02 Jun 2020	02 Jun 2021	09 Jun 2020	02 Jun 2021	10 Jun 2020
G2A	SE207037.007	LB201463	02 Jun 2020	02 Jun 2020	02 Jun 2021	09 Jun 2020	02 Jun 2021	10 Jun 2020
F1A	SE207037.008	LB201463	02 Jun 2020	02 Jun 2020	02 Jun 2021	09 Jun 2020	02 Jun 2021	10 Jun 2020
F2A	SE207037.009	LB201463	02 Jun 2020	02 Jun 2020	02 Jun 2021	09 Jun 2020	02 Jun 2021	10 Jun 2020
F3A	SE207037.010	LB201463	02 Jun 2020	02 Jun 2020	02 Jun 2021	09 Jun 2020	02 Jun 2021	10 Jun 2020

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
G1	SE207037.001	LB201387	02 Jun 2020	02 Jun 2020	30 Jun 2020	05 Jun 2020	30 Jun 2020	10 Jun 2020
G2	SE207037.002	LB201387	02 Jun 2020	02 Jun 2020	30 Jun 2020	05 Jun 2020	30 Jun 2020	10 Jun 2020
F1	SE207037.003	LB201387	02 Jun 2020	02 Jun 2020	30 Jun 2020	05 Jun 2020	30 Jun 2020	10 Jun 2020
F2	SE207037.004	LB201387	02 Jun 2020	02 Jun 2020	30 Jun 2020	05 Jun 2020	30 Jun 2020	10 Jun 2020
F3	SE207037.005	LB201387	02 Jun 2020	02 Jun 2020	30 Jun 2020	05 Jun 2020	30 Jun 2020	10 Jun 2020
D3	SE207037.013	LB201387	02 Jun 2020	02 Jun 2020	30 Jun 2020	05 Jun 2020	30 Jun 2020	10 Jun 2020

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
G1	SE207037.001	LB201313	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	10 Jun 2020	10 Jun 2020
G2	SE207037.002	LB201313	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	10 Jun 2020	10 Jun 2020
F1	SE207037.003	LB201313	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	10 Jun 2020	10 Jun 2020
F2	SE207037.004	LB201313	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	10 Jun 2020	10 Jun 2020
F3	SE207037.005	LB201313	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	10 Jun 2020	10 Jun 2020
Trip Blank	SE207037.012	LB201313	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	10 Jun 2020	10 Jun 2020
D3	SE207037.013	LB201313	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	10 Jun 2020	10 Jun 2020

OC Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
G1	SE207037.001	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
G2	SE207037.002	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F1	SE207037.003	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F2	SE207037.004	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F3	SE207037.005	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
Trip Blank	SE207037.012	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
D3	SE207037.013	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020

OP Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
G1	SE207037.001	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
G2	SE207037.002	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F1	SE207037.003	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F2	SE207037.004	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F3	SE207037.005	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
Trip Blank	SE207037.012	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
D3	SE207037.013	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020

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
G1	SE207037.001	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
G2	SE207037.002	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F1	SE207037.003	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F2	SE207037.004	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F3	SE207037.005	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
Trip Blank	SE207037.012	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
D3	SE207037.013	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020

PCBs in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
G1	SE207037.001	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
G2	SE207037.002	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F1	SE207037.003	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F2	SE207037.004	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F3	SE207037.005	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
Trip Blank	SE207037.012	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020

HOLDING TIME SUMMARY

SE207037 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
D3	SE207037.013	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020

Speciated Phenols in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
G1	SE207037.001	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
G2	SE207037.002	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F1	SE207037.003	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F2	SE207037.004	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F3	SE207037.005	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
Trip Blank	SE207037.012	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
D3	SE207037.013	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
G1	SE207037.001	LB201371	02 Jun 2020	02 Jun 2020	29 Nov 2020	05 Jun 2020	29 Nov 2020	10 Jun 2020
G2	SE207037.002	LB201371	02 Jun 2020	02 Jun 2020	29 Nov 2020	05 Jun 2020	29 Nov 2020	10 Jun 2020
F1	SE207037.003	LB201371	02 Jun 2020	02 Jun 2020	29 Nov 2020	05 Jun 2020	29 Nov 2020	10 Jun 2020
F2	SE207037.004	LB201371	02 Jun 2020	02 Jun 2020	29 Nov 2020	05 Jun 2020	29 Nov 2020	10 Jun 2020
F3	SE207037.005	LB201371	02 Jun 2020	02 Jun 2020	29 Nov 2020	05 Jun 2020	29 Nov 2020	10 Jun 2020
D3	SE207037.013	LB201371	02 Jun 2020	02 Jun 2020	29 Nov 2020	05 Jun 2020	29 Nov 2020	10 Jun 2020

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
G1	SE207037.001	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
G2	SE207037.002	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F1	SE207037.003	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F2	SE207037.004	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F3	SE207037.005	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
Trip Blank	SE207037.012	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
D3	SE207037.013	LB201305	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
G1	SE207037.001	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
G2	SE207037.002	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F1	SE207037.003	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F2	SE207037.004	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F3	SE207037.005	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
Trip Spike	SE207037.011	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
Trip Blank	SE207037.012	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
D3	SE207037.013	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020

Volatile Petroleum Hydrocarbons in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
G1	SE207037.001	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
G2	SE207037.002	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F1	SE207037.003	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F2	SE207037.004	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
F3	SE207037.005	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
Trip Spike	SE207037.011	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
Trip Blank	SE207037.012	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020
D3	SE207037.013	LB201295	02 Jun 2020	02 Jun 2020	16 Jun 2020	05 Jun 2020	15 Jul 2020	10 Jun 2020

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

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

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	G1	SE207037.001	%	60 - 130%	103
	G2	SE207037.002	%	60 - 130%	107
	F1	SE207037.003	%	60 - 130%	101
	F2	SE207037.004	%	60 - 130%	97
	F3	SE207037.005	%	60 - 130%	102
	D3	SE207037.013	%	60 - 130%	105

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	G1	SE207037.001	%	60 - 130%	88
	G2	SE207037.002	%	60 - 130%	94
	F1	SE207037.003	%	60 - 130%	94
	F2	SE207037.004	%	60 - 130%	82
	F3	SE207037.005	%	60 - 130%	87
	D3	SE207037.013	%	60 - 130%	108
d14-p-terphenyl (Surrogate)	G1	SE207037.001	%	60 - 130%	99
	G2	SE207037.002	%	60 - 130%	100
	F1	SE207037.003	%	60 - 130%	94
	F2	SE207037.004	%	60 - 130%	91
	F3	SE207037.005	%	60 - 130%	107
	D3	SE207037.013	%	60 - 130%	113

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	G1	SE207037.001	%	70 - 130%	88
	G2	SE207037.002	%	70 - 130%	94
	F1	SE207037.003	%	70 - 130%	94
	F2	SE207037.004	%	70 - 130%	82
	F3	SE207037.005	%	70 - 130%	87
	D3	SE207037.013	%	70 - 130%	108
d14-p-terphenyl (Surrogate)	G1	SE207037.001	%	70 - 130%	99
	G2	SE207037.002	%	70 - 130%	100
	F1	SE207037.003	%	70 - 130%	94
	F2	SE207037.004	%	70 - 130%	91
	F3	SE207037.005	%	70 - 130%	107
	D3	SE207037.013	%	70 - 130%	113
d5-nitrobenzene (Surrogate)	G1	SE207037.001	%	70 - 130%	93
	G2	SE207037.002	%	70 - 130%	96
	F1	SE207037.003	%	70 - 130%	98
	F2	SE207037.004	%	70 - 130%	92
	F3	SE207037.005	%	70 - 130%	96
	D3	SE207037.013	%	70 - 130%	107

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	G1	SE207037.001	%	60 - 130%	103
	G2	SE207037.002	%	60 - 130%	107
	F1	SE207037.003	%	60 - 130%	101
	F2	SE207037.004	%	60 - 130%	97
	F3	SE207037.005	%	60 - 130%	102
	D3	SE207037.013	%	60 - 130%	105

Speciated Phenols in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2,4,6-Tribromophenol (Surrogate)	G1	SE207037.001	%	70 - 130%	98
	G2	SE207037.002	%	70 - 130%	99
	F1	SE207037.003	%	70 - 130%	97
	F2	SE207037.004	%	70 - 130%	96
	F3	SE207037.005	%	70 - 130%	94
	D3	SE207037.013	%	70 - 130%	94
d5-phenol (Surrogate)	G1	SE207037.001	%	50 - 130%	89
	G2	SE207037.002	%	50 - 130%	91
	F1	SE207037.003	%	50 - 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.

Speciated Phenols in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d5-phenol (Surrogate)	F2	SE207037.004	%	50 - 130%	89
	F3	SE207037.005	%	50 - 130%	88
	D3	SE207037.013	%	50 - 130%	87

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	G1	SE207037.001	%	60 - 130%	92
	G2	SE207037.002	%	60 - 130%	94
	F1	SE207037.003	%	60 - 130%	99
	F2	SE207037.004	%	60 - 130%	103
	F3	SE207037.005	%	60 - 130%	91
	Trip Spike	SE207037.011	%	60 - 130%	94
	Trip Blank	SE207037.012	%	60 - 130%	91
	D3	SE207037.013	%	60 - 130%	89
d4-1,2-dichloroethane (Surrogate)	G1	SE207037.001	%	60 - 130%	113
	G2	SE207037.002	%	60 - 130%	115
	F1	SE207037.003	%	60 - 130%	125
	F2	SE207037.004	%	60 - 130%	124
	F3	SE207037.005	%	60 - 130%	111
	Trip Spike	SE207037.011	%	60 - 130%	110
	Trip Blank	SE207037.012	%	60 - 130%	112
	D3	SE207037.013	%	60 - 130%	114
d8-toluene (Surrogate)	G1	SE207037.001	%	60 - 130%	109
	G2	SE207037.002	%	60 - 130%	111
	F1	SE207037.003	%	60 - 130%	119
	F2	SE207037.004	%	60 - 130%	121
	F3	SE207037.005	%	60 - 130%	107
	Trip Spike	SE207037.011	%	60 - 130%	110
	Trip Blank	SE207037.012	%	60 - 130%	109
	D3	SE207037.013	%	60 - 130%	110

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	G1	SE207037.001	%	60 - 130%	92
	G2	SE207037.002	%	60 - 130%	94
	F1	SE207037.003	%	60 - 130%	99
	F2	SE207037.004	%	60 - 130%	103
	F3	SE207037.005	%	60 - 130%	91
	Trip Blank	SE207037.012	%	60 - 130%	91
	D3	SE207037.013	%	60 - 130%	89
d4-1,2-dichloroethane (Surrogate)	G1	SE207037.001	%	60 - 130%	113
	G2	SE207037.002	%	60 - 130%	115
	F1	SE207037.003	%	60 - 130%	125
	F2	SE207037.004	%	60 - 130%	124
	F3	SE207037.005	%	60 - 130%	111
	Trip Blank	SE207037.012	%	60 - 130%	112
	D3	SE207037.013	%	60 - 130%	114
d8-toluene (Surrogate)	G1	SE207037.001	%	60 - 130%	109
	G2	SE207037.002	%	60 - 130%	111
	F1	SE207037.003	%	60 - 130%	119
	F2	SE207037.004	%	60 - 130%	121
	F3	SE207037.005	%	60 - 130%	107
	Trip Blank	SE207037.012	%	60 - 130%	109
	D3	SE207037.013	%	60 - 130%	110

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

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

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB201387.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB201305.001		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)	%	-	95

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB201305.001		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)	%	-	98
		d14-p-terphenyl (Surrogate)	%	-	92

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB201305.001	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

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB201305.001		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	95
		2-fluorobiphenyl (Surrogate)	%	-	98
		d14-p-terphenyl (Surrogate)	%	-	92

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB201305.001		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)	%	-	95

Speciated Phenols in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB201305.001		Phenol	mg/kg	0.5	<0.5
		2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5
		3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1
		2-chlorophenol	mg/kg	0.5	<0.5
		2,4-dimethylphenol	mg/kg	0.5	<0.5
		2,6-dichlorophenol	mg/kg	0.5	<0.5
		2,4-dichlorophenol	mg/kg	0.5	<0.5
		2,4,6-trichlorophenol	mg/kg	0.5	<0.5
		2-nitrophenol	mg/kg	0.5	<0.5
		4-nitrophenol	mg/kg	1	<1
		2,4,5-trichlorophenol	mg/kg	0.5	<0.5
		2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1
		Pentachlorophenol	mg/kg	0.5	<0.5
		2,4-dinitrophenol	mg/kg	2	<2
		4-chloro-3-methylphenol	mg/kg	2	<2
	Surrogates	2,4,6-Tribromophenol (Surrogate)	%	-	88
		d5-phenol (Surrogate)	%	-	92

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB201371.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB201305.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR

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

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

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB201295.001	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)	%	-	115
		d8-toluene (Surrogate)	%	-	109
		Bromofluorobenzene (Surrogate)	%	-	99
	Totals	Total BTEX	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB201295.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	115

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

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

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

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

Mercury In Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207037.003	LB201387.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE207037.013	LB201387.018	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207024.006	LB201313.011	% Moisture	%w/w	1	6.362545018	05.3811659192	47	17
SE207037.013	LB201313.019	% Moisture	%w/w	1	10.4	11.3	39	8

OP Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207037.003	LB201305.024		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	-	0.5	0.4	30	5
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207037.003	LB201305.024		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	0.1	144	16
			Pyrene	mg/kg	0.1	<0.1	0.1	119	30
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	162	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	197	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	159	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	197	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	165	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	182	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	144	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	6
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	5
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1

PCBs in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207024.006	LB201305.014	Arochlor 1016	mg/kg	0.2	0	0	200	0
		Arochlor 1221	mg/kg	0.2	0	0	200	0
		Arochlor 1232	mg/kg	0.2	0	0	200	0
		Arochlor 1242	mg/kg	0.2	0	0	200	0
		Arochlor 1248	mg/kg	0.2	0	0	200	0

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 %
SE207024.006	LB201305.014		Arochlor 1254	mg/kg	0.2	0	0	200	0
			Arochlor 1260	mg/kg	0.2	0	0	200	0
			Arochlor 1262	mg/kg	0.2	0	0	200	0
			Arochlor 1268	mg/kg	0.2	0	0	200	0
			Total PCBs (Arochlors)	mg/kg	1	0	0	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.147	0.143	30	3

Speciated Phenols in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207037.013	LB201305.022		Phenol	mg/kg	0.5	<0.5	<0.5	200	0
			2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5	<0.5	200	0
			3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1	<1	200	0
			Total Cresol	mg/kg	1.5	<1.5	<1.5	200	0
			2-chlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,4-dimethylphenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,6-dichlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,4-dichlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,4,6-trichlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2-nitrophenol	mg/kg	0.5	<0.5	<0.5	200	0
			4-nitrophenol	mg/kg	1	<1	<1	200	0
			2,4,5-trichlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1	<1	200	0
			Pentachlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,4-dinitrophenol	mg/kg	2	<2	<2	200	0
			4-chloro-3-methylphenol	mg/kg	2	<2	<2	200	0
		Surrogates	2,4,6-Tribromophenol (Surrogate)	mg/kg	-	4.7	4.7	30	0
			d5-phenol (Surrogate)	mg/kg	-	1.7	1.8	30	1

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 %
SE207037.003	LB201371.014	Arsenic, As	mg/kg	1	3	4	59	44
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	17	19	33	7
		Copper, Cu	mg/kg	0.5	14	14	34	6
		Nickel, Ni	mg/kg	0.5	9.8	12	35	18
		Lead, Pb	mg/kg	1	20	24	35	15
		Zinc, Zn	mg/kg	2	59	82	33	32
SE207037.013	LB201371.018	Arsenic, As	mg/kg	1	3	3	62	1
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	24	31	32	27
		Copper, Cu	mg/kg	0.5	16	18	33	9
		Nickel, Ni	mg/kg	0.5	16	16	33	0
		Lead, Pb	mg/kg	1	20	50	33	86 ②
		Zinc, Zn	mg/kg	2	71	85	33	19

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207024.006	LB201305.014		TRH C10-C14	mg/kg	20	0	0	200	0
			TRH C15-C28	mg/kg	45	0	0	200	0
			TRH C29-C36	mg/kg	45	0	0	200	0
			TRH C37-C40	mg/kg	100	0	0	200	0
			TRH C10-C36 Total	mg/kg	110	0	0	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	0	0	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	0	0	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	0	0	200	0
			TRH >C34-C40 (F4)	mg/kg	120	0	0	200	0
SE207037.003	LB201305.025		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	470	400	40	17
			TRH C29-C36	mg/kg	45	630	560	38	12
			TRH C37-C40	mg/kg	100	180	170	87	3
			TRH C10-C36 Total	mg/kg	110	1100	960	41	14

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

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

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

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207037.003	LB201305.025		TRH >C10-C40 Total (F bands)	mg/kg	210	1300	1100	47	12
		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	920	790	40	15
			TRH >C34-C40 (F4)	mg/kg	120	360	340	65	5

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207024.006	LB201295.014	Monocyclic	Benzene	mg/kg	0.1	0.007856281	20.0077231151	200	0
		Aromatic	Toluene	mg/kg	0.1	0.054717466	80.0545762928	200	0
			Ethylbenzene	mg/kg	0.1	0.027737215	50.0280797529	200	0
			m/p-xylene	mg/kg	0.2	0.043693925	20.0505114543	200	0
			o-xylene	mg/kg	0.1	0.008327854	20.0111484203	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	0.004621341	90.0031179780	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.6896132774	3.217085899[illegible]	50	4
			d8-toluene (Surrogate)	mg/kg	-	12.2960759150	2.6667562611	50	3
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.7898487857	10.9762407201	50	2
		Totals	Total Xylenes	mg/kg	0.3	0.052021779	50.0616598747	200	0
			Total BTEX	mg/kg	0.6	0	0	200	0
SE207037.005	LB201295.025	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.1	12.4	50	11
			d8-toluene (Surrogate)	mg/kg	-	10.7	11.8	50	11
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10.2	50	11
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0

Volatile Petroleum Hydrocarbons in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207024.006	LB201295.014		TRH C6-C10	mg/kg	25	0.028673389	20.1675088618	200	0
			TRH C6-C9	mg/kg	20	0.037719416	40.1714314624	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.6896132774	3.217085899[illegible]	30	4
			d8-toluene (Surrogate)	mg/kg	-	12.2960759150	2.6667562611	30	3
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.7898487857	10.9762407201	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	0.007856281	20.0077231151	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	0.028673389	20.1675088618	200	0
SE207037.005	LB201295.025		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.1	12.4	30	11
			d8-toluene (Surrogate)	mg/kg	-	10.7	11.8	30	11
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10.2	30	11
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

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

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

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB201387.002	Mercury	mg/kg	0.05	0.24	0.2	70 - 130	122

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB201305.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	93
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	93
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	90
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	89
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	89
		p,p'-DDT	mg/kg	0.1	0.1	0.2	60 - 140	74
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.15	40 - 130	95

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB201305.002		Dichlorvos	mg/kg	0.5	1.3	2	60 - 140	66
		Diazinon (Dimpylate)	mg/kg	0.5	2.0	2	60 - 140	100
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.9	2	60 - 140	97
		Ethion	mg/kg	0.2	1.6	2	60 - 140	81
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	96
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	91

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB201305.002		Naphthalene	mg/kg	0.1	4.6	4	60 - 140	114
		Acenaphthylene	mg/kg	0.1	4.5	4	60 - 140	112
		Acenaphthene	mg/kg	0.1	5.0	4	60 - 140	124
		Phenanthrene	mg/kg	0.1	4.7	4	60 - 140	119
		Anthracene	mg/kg	0.1	4.7	4	60 - 140	116
		Fluoranthene	mg/kg	0.1	4.7	4	60 - 140	118
		Pyrene	mg/kg	0.1	5.1	4	60 - 140	127
		Benzo(a)pyrene	mg/kg	0.1	4.8	4	60 - 140	119
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	90
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	96
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	91

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB201305.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	91

Speciated Phenols in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB201305.002		Phenol	mg/kg	0.5	1.0	1	70 - 130	96
		2,4-dichlorophenol	mg/kg	0.5	1.1	1	70 - 130	108
		2,4,6-trichlorophenol	mg/kg	0.5	0.8	1	70 - 130	77
		Pentachlorophenol	mg/kg	0.5	0.9	1	70 - 130	85
	Surrogates	2,4,6-Tribromophenol (Surrogate)	mg/kg	-	4.4	5	40 - 130	88
		d5-phenol (Surrogate)	mg/kg	-	1.8	2	40 - 130	88

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 %
LB201371.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	105
	Cadmium, Cd	mg/kg	0.3	5.5	5.41	80 - 120	101
	Chromium, Cr	mg/kg	0.5	40	38.31	80 - 120	104
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	102
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	100
	Lead, Pb	mg/kg	1	91	89.9	80 - 120	102
	Zinc, Zn	mg/kg	2	270	273	80 - 120	100

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR

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

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB201305.002		TRH C10-C14	mg/kg	20	37	40	60 - 140	93
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	98
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	75
	TRH F Bands	TRH >C10-C16	mg/kg	25	40	40	60 - 140	100
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	93
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	75

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB201295.002	Monocyclic	Benzene	mg/kg	0.1	4.3	5	60 - 140	85
	Aromatic	Toluene	mg/kg	0.1	4.3	5	60 - 140	86
		Ethylbenzene	mg/kg	0.1	4.2	5	60 - 140	84
		m/p-xylene	mg/kg	0.2	8.4	10	60 - 140	84
		o-xylene	mg/kg	0.1	4.1	5	60 - 140	82
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.9	10	70 - 130	119
		d8-toluene (Surrogate)	mg/kg	-	11.7	10	70 - 130	117
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.7	10	70 - 130	107

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB201295.002		TRH C6-C10	mg/kg	25	81	92.5	60 - 140	88
		TRH C6-C9	mg/kg	20	74	80	60 - 140	93
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.9	10	70 - 130	119
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.7	10	70 - 130	107
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	56	62.5	60 - 140	90

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

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason 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%
SE206994.058	LB201387.004	Mercury	mg/kg	0.05	0.25	0.01968651942	0.2	115

OC Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE207024.001	LB201305.023		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	0	-	-
			Alpha BHC	mg/kg	0.1	<0.1	0	-	-
			Lindane	mg/kg	0.1	<0.1	0	-	-
			Heptachlor	mg/kg	0.1	0.2	0	0.2	118
			Aldrin	mg/kg	0.1	0.2	0	0.2	111
			Beta BHC	mg/kg	0.1	<0.1	0	-	-
			Delta BHC	mg/kg	0.1	0.2	0	0.2	110
			Heptachlor epoxide	mg/kg	0.1	<0.1	0	-	-
			o,p'-DDE	mg/kg	0.1	<0.1	0	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	0	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	0	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	0	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	0	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	0	-	-
			Dieldrin	mg/kg	0.2	0.9	0.366	0.2	277 ⑤
			Endrin	mg/kg	0.2	0.2	0	0.2	116
			o,p'-DDD	mg/kg	0.1	<0.1	0	-	-
			o,p'-DDT	mg/kg	0.1	<0.1	0	-	-
			Beta Endosulfan	mg/kg	0.2	<0.2	0	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	0	-	-
			p,p'-DDT	mg/kg	0.1	0.1	0	0.2	73
			Endosulfan sulphate	mg/kg	0.1	<0.1	0	-	-
			Endrin Aldehyde	mg/kg	0.1	<0.1	0	-	-
			Methoxychlor	mg/kg	0.1	<0.1	0	-	-
			Endrin Ketone	mg/kg	0.1	<0.1	0	-	-
			Isodrin	mg/kg	0.1	<0.1	0	-	-
			Mirex	mg/kg	0.1	<0.1	0	-	-
			Total CLP OC Pesticides	mg/kg	1	2	0.366	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.147	-	100

OP Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE207024.001	LB201305.023		Dichlorvos	mg/kg	0.5	1.5	0	2	74
			Dimethoate	mg/kg	0.5	<0.5	0	-	-
			Diazinon (Dimpylate)	mg/kg	0.5	2.1	0.05435126457	2	102
			Fenitrothion	mg/kg	0.2	<0.2	0.03096076226	-	-
			Malathion	mg/kg	0.2	<0.2	0.04629593554	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.1	0	2	105
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	0	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	0.00589957604	-	-
			Methidathion	mg/kg	0.5	<0.5	0.00943761205	-	-
			Ethion	mg/kg	0.2	1.8	0.00998323883	2	89
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	0.12373024064	-	-
			Total OP Pesticides*	mg/kg	1.7	7.5	0	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.43654763314	-	95
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.46501861722	-	99

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE207024.001	LB201305.023	Naphthalene	mg/kg	0.1	5.0	0.00229897389	4	124
		2-methylnaphthalene	mg/kg	0.1	<0.1	0.00162775998	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	0.00080420079	-	-
		Acenaphthylene	mg/kg	0.1	5.0	0.02064655081	4	123
		Acenaphthene	mg/kg	0.1	5.1	0.00213622442	4	127
		Fluorene	mg/kg	0.1	<0.1	0.00375144688	-	-
		Phenanthrene	mg/kg	0.1	5.0	0.04313182108	4	125

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%
SE207024.001	LB201305.023		Anthracene	mg/kg	0.1	4.9	0.02439922840	4	123
			Fluoranthene	mg/kg	0.1	5.4	0.17654255159	4	130
			Pyrene	mg/kg	0.1	5.6	0.19864696138	4	135
			Benzo(a)anthracene	mg/kg	0.1	0.1	0.09940056845	-	-
			Chrysene	mg/kg	0.1	0.1	0.10168477494	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.2	0.13523328687	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	0.06966001610	-	-
			Benzo(a)pyrene	mg/kg	0.1	5.2	0.13073674104	4	128
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.1	0.08381683137	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	0.00764526625	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	0.07093519774	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	5.3	0.13175358879	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	5.4	0.27275358879	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	5.3	0.20225358879	-	-
			Total PAH (18)	mg/kg	0.8	42	0.60761102897	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.48348026694	-	99
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.43654763314	-	95
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.46501861722	-	99

PCBs in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE207024.001	LB201305.023		Arochlor 1016	mg/kg	0.2	<0.2	0	-	-
			Arochlor 1221	mg/kg	0.2	<0.2	0	-	-
			Arochlor 1232	mg/kg	0.2	<0.2	0	-	-
			Arochlor 1242	mg/kg	0.2	<0.2	0	-	-
			Arochlor 1248	mg/kg	0.2	<0.2	0	-	-
			Arochlor 1254	mg/kg	0.2	<0.2	0	-	-
			Arochlor 1260	mg/kg	0.2	0.4	0	0.4	104
			Arochlor 1262	mg/kg	0.2	<0.2	0	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	0	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	0	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0.147	-	102

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%
SE206994.058	LB201371.004	Arsenic, As	mg/kg	1	55	4.82637639054	50	100
		Cadmium, Cd	mg/kg	0.3	45	-0.00227080850	50	91
		Chromium, Cr	mg/kg	0.5	70	19.97357742352	50	100
		Copper, Cu	mg/kg	0.5	63	15.75532354986	50	94
		Nickel, Ni	mg/kg	0.5	58	7.22525849225	50	102
		Lead, Pb	mg/kg	1	64	16.58507697655	50	96
		Zinc, Zn	mg/kg	2	110	34.58115315852	50	108

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE207024.001	LB201305.023		TRH C10-C14	mg/kg	20	42	0	40	105
			TRH C15-C28	mg/kg	45	57	14	40	108
			TRH C29-C36	mg/kg	45	<45	0	40	83
			TRH C37-C40	mg/kg	100	<100	0	-	-
			TRH C10-C36 Total	mg/kg	110	<110	0	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	0	-	-
		TRH F Bands	TRH >C10-C16	mg/kg	25	41	0	40	103
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	41	0	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	10	40	105
			TRH >C34-C40 (F4)	mg/kg	120	<120	0	-	-

VOC's in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE207129.002	LB201295.024	Monocyclic	Benzene	mg/kg	0.1	4.1	<0.1	5	82
		Aromatic	Toluene	mg/kg	0.1	4.1	<0.1	5	80
			Ethylbenzene	mg/kg	0.1	4.0	<0.1	5	80
			m/p-xylene	mg/kg	0.2	8.2	<0.2	10	81
			o-xylene	mg/kg	0.1	4.0	<0.1	5	79

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

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

VOC's in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE207129.002	LB201295.024	Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.3	11.6	10	113
			d8-toluene (Surrogate)	mg/kg	-	10.9	11.0	10	109
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.0	10.0	10	100
		Totals	Total Xylenes	mg/kg	0.3	12	<0.3	-	-
			Total BTEX	mg/kg	0.6	24	<0.6	-	-

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE207129.002	LB201295.024		TRH C6-C10	mg/kg	25	76	<25	92.5	82
			TRH C6-C9	mg/kg	20	68	<20	80	85
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.3	11.6	10	113
			d8-toluene (Surrogate)	mg/kg	-	10.9	11.0	10	109
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.0	10.0	-	100
		VPH F	Benzene (F0)	mg/kg	0.1	4.1	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	52	<25	62.5	82

MATRIX SPIKE DUPLICATES

SE207037 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 relevant report comments for further information.

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Appendix H – Site History Information

Executive Summary

Dataset	Identified	Not identified
Sensitive Receptors	✓	
Planning Controls	✓	
Soil Landscape	✓	
Salinity	!	
Acid Sulfate Soil	!	
Geology	✓	
Topography	✓	
Hydrogeology	✓	
Groundwater Bores	✓	
Groundwater Dependent Ecosystems		✗
Other Bores		✗
Environmental Registers, Licences and Incidents		
Contaminated Land Record of Notices		✗
Sites Notified as Contaminated to the NSW EPA		✗
Potentially Contaminated Areas		
Defence Sites (current, former and RCIP)		✗
Former Gasworks Sites		✗
PFAS Sites		✗
Licensing under the POEO Act		
Licences		✗
Surrendered Licences still Regulated by EPA		✗
Clean Up and Penalty Notices		✗
NPI Industrial Facilities		✗
Public Register of Properties Affected by Loose-Fill Asbestos Insulation		✗
Other Potentially Contaminating Activities		
Contamination Legacy Areas		✗
Derelict Mines and Quarries		✗
Historical Landfills		✗
Unexploded Ordnance (UXO) Sites - Department of Defence (DoD)		✗
Aviation Fuel Depots/Terminals		✗
Cattle Dip Sites		✗
Dry Cleaners		✗
Liquid Fuel Depots/Terminals		✗
Fire and Rescue Sites		✗
Power Stations		✗
Service Stations		✗
Substation/Switching Station		✗
Telephone Exchanges		✗
Waste Management Facilities		✗
Wastewater Treatment Facilities		✗
Current Commercial & Trade Directory Data		✗
Historic Commercial & Trade Directory Data	!	
Federal, State and Local Heritage	!	
Natural Hazards	!	
State Environmental Planning Policy (Coastal Management)		✗

Understanding your Report

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

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

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

The report provided by LI Resources includes data listed on page 3 (table of contents). All sources of data and definitions are provided on the report maps and as listed in the Product Guide (Attached). For a full list of references, metadata, publications or additional information not provided in this report, please contact LI Resources at info@liresources.com.au.

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

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Section 1 - Property Setting

1.1 SITE LOCATION MAP AND SENSITIVE RECEPTORS

Map 1 (200m Buffer)

Sensitive receptor	Category	Distance (m)*	Direction
Real Life Church	Place of Worship	137	North-east
Kingswood Public School	Primary School	146	North-east

*Distance from the sensitive receptor point feature to the site boundary centroid.

1.2 PLANNING CONTROLS

Map 2 (onsite)

Zoning

Zoning	R3	Medium Density Residential

Environmental Planning Instruments

Type	Local Environmental Plan	Classification
Not identified	-	-

1.3 SOIL AND LAND USE INFORMATION

Map 3a/3b (onsite)

Soil Landscape

Soil Landscape	ERlu	LUDDENHAM	**Soil Group**	EROSIONAL
Description	**Landscape**—undulating to rolling low hills on Wianamatta Group shales, often associated with Minchinbury Sandstone. Local relief 50–80 m, slopes 5–20%. Narrow ridges, hillcrests and valleys. Extensively cleared tall open forest (wet sclerophyll forest). **Soils**—shallow (<100 cm) dark podzolic soils (Dd3.51) or massive earthy clays (Uf6.71) on crests; moderately deep (70–150 cm) red podzolic soils (Dr2.11, Dr2.41, Dr3.11) on upper slopes; moderately deep (<150 cm) yellow podzolic soils (Dy4.22) and prairie soils (Gn3.26) on lower slopes and drainage lines. **Limitations**—water erosion hazard, localised steep slopes, localised mass movement hazard, localized shallow soils, localised surface movement potential; localised impermeable highly plastic subsoil, moderately reactive.			

Salinity Hazard

Hydrologic Soil Group	-	Not identified
Salinity Hazard	Very High	Western Sydney Hydrogeological Landscapes

Acid Sulfate Soil

ASS Risk Maps *(Table 1.3.1)*	On the Property?		Within Record Search Buffer?	
Class	Not identified		Not identified	
Atlas of Australian Acid Sulfate Soil *(Table 1.3.2)*	Cq(p4)	ASS in inland lakes, waterways, wetlands and riparian zones	**Probability of Occurrence**	Extremely low probability of occurrence

Table 1.3.1. Classification scheme in the ASS Planning Maps

Class of Land as shown on ASS Planning Maps	
1	Acid sulfate soils in a class 1 area are likely to be found on and below the natural ground surface.
2	Acid sulfate soils in a class 2 area are likely to be found below the natural ground surface.
3	Acid sulfate soils in a class 3 area are likely to be found beyond 1 metre below the natural ground surface.
4	Acid sulfate soils in a class 4 area are likely to be found beyond 2 metres below the natural ground surface.
5	Acid sulfate soils are not typically found in Class 5 areas. Areas classified as Class 5 are located within 500 metres on adjacent class 1,2,3 or 4 land.

For each class of land, the maps identify the type of works likely to present an environmental risk if undertaken in the particular class of land. If these types of works are proposed, further investigation is required to determine if ASS are actually present and whether they are present in such concentrations as to pose a risk to the environment.

Table 1.3.2. Atlas of Australian Acid Sulfate Soils[1] (ASRIS) (CSIRO/NatCASS)

Code	Distinguishing soil/sediment properties, vegetation, landforms, or other characteristics
	Probability of Occurrence of ASS[1]
A	**High Probability of occurrence** - (>70% chance of occurrence in mapping unit)
B	**Low Probability of occurrence** - (6-70% chance of occurrence in mapping unit)
C	**Extremely low probability of occurrence** - (1-5% chance of occurrence in mapping unit)
D	**No probability of occurrence** - (<1% chance of occurrence in mapping unit)
x	**Disturbed ASS[1] terrain** - (ASS[1] material present below urban development).
u	**Unclassified** - (Insufficient information to classify map unit)
	Zones
a	Potential acid sulfate soil material and/or Monosulfidic Black Ooze (MBO).
b, c	Potential acid sulfate soil generally within upper 1 m.
c, d, e	ASS[1] generally within upper 1 m.
f	ASS[1] generally below 1 m from the surface
g	ASS[1], generally below 3 m from the surface.
h	ASS[1] generally within 1 m of the surface.
i, j	ASS[1] generally below 1 m of the surface.
k	ASS[1] material and/or Monosulfidic Black Ooze (MBO).
l, m, n, o, p, q	ASS[1] generally within upper 1 m in wet / riparian areas.
	Subscripts to codes
(a)	Actual acid sulfate soil (AASS) = sulfuric material.
(p)	Potential acid sulfate soil (PASS) = sulfidic material.
(q)	Monosulfidic Black Ooze (MBO) is organic ooze enriched by iron monosulfides.
	Confidence levels
(1)	All necessary analytical and morphological data are available
(2)	Analytical data are incomplete but are sufficient to classify the soil with a reasonable degree of confidence
(3)	No necessary analytical data are available, but confidence is fair, based on a knowledge of similar soils in similar environments

Code	Distinguishing soil/sediment properties, vegetation, landforms, or other characteristics
	Probability of Occurrence of ASS[1]
(4)	No necessary analytical data are available, and classifier has little knowledge or experience with ASS, hence classification is provisional

[1]Acid Sulfate Soils (ASS) are all those soils in which sulfuric acid may be produced, is being produced, or has been produced in amounts that have a lasting effect on main soil characteristics (Pons 1973). Acid sulfate soil (ASS) may include PASS or AASS + PASS. Potential acid sulfate soil (PASS) = sulfidic material. Actual acid sulfate soil (AASS) = sulfuric material.

1.4 GEOLOGY AND TOPOGRAPHY

Map 4 (onsite)

Geology

Map Sheet	Symbol	Formation	Group	Era	Period	Description
Penrith 1:100 000 Geological Map	Rwb	Bringelly Shale	Wianamatta Group (undifferentiated)	Mesozoic	Middle Triassic	Shale, carbonaceous claystone,claystone, laminite, fine to medium-grained lithic sandstone, rare coal and tuff

Topography

Topography	44mAHD

Section 2 - Hydrogeology

2.1 HYDROGEOLOGY AND GROUNDWATER BORES

Map 5a (500m - 2000m Buffer)

	On the Property?	Within Record Search Buffer?[1]
Aquifer Type	Porous, extensive aquifers of low to moderate productivity	Porous, extensive aquifers of low to moderate productivity Porous, extensive highly productive aquifers
Drinking Water Catchments	Not identified	Not identified
Protected Riparian Corridor	Not identified	Werrington Creek
UPSS Environmentally sensitive zone	Not identified	Yes
Wetlands	Not identified	Werrington Creek
Groundwater Bores	Not identified	Yes, see 2.1.1 and 2.1.2

[1] - Groundwater bore buffer size will change depending on the number of GW bores found within buffer; if there are less than 7 bores within buffer, buffer will increase to max 2km until bores are found.

Table 2.1.1. Groundwater Bore Details

Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity	Yield (L/s)	Distance (m)	Direction
GW020547	Water supply, Manufacturing and industry	01-06-63	91.4	91.4	9.1	-	0.06	1292.61	north-east
GW019680	Water supply, Manufacturing and industry	01-04-62	53.3	53.3	10.9	Salty	3.54	1318.39	north-east
GW020069	Water supply, Manufacturing and industry	01-06-62	75.6	75.5	6		0.25	1340.13	north-east
GW113279	Monitoring	02-05-07	7.5	7.5	-	-	-	1521.25	south-west
GW113280	Monitoring	02-05-07	8.2	8.2	-	-	-	1535.79	south-west
GW113283	Monitoring	02-05-07	2.8	2.8	-	-	-	1547.15	south-west
GW113282	Monitoring	02-05-07	7	7	-	-	-	1559.11	south-west
GW113281	Monitoring	02-05-07	2.85	2.85	-	-	-	1571.34	south-west
GW103764	Irrigated agriculture	06-10-95	231.6	231.6	-	-	0.83	1724.74	south
GW060794	Household	01-02-85	78.1	78.1	-	-	0.06	1795.46	south
GW114593	Monitoring	12-01-11	7.5	7.5	-	-	-	1861.78	south-west
GW114594	Monitoring	12-01-11	7	7	-	-	-	1871.51	south-west

Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity	Yield (L/s)	Distance (m)	Direction
GW114591	Monitoring	12-01-11	7	7	-	-	-	1874.76	south-west
GW114592	Monitoring	12-01-11	8	8	-	-	-	1877.55	south-west
GW111617	Monitoring	20-10-11	210	210	69	4450.00 mg/L	1.12	1959.53	north-west

Table 2.1.2. Groundwater Bore Driller Lithology Details

Groundwater Bore ID	From Depth (m)	To Depth (m)	Lithology	Description	Distance (m)	Direction
GW020547	0.00	0.91	TPSL	Topsoil	1292.61	north-east
GW020547	0.91	9.14	CLAY	Clay yellow	1292.61	north-east
GW020547	0.91	9.14	GRVL	Pebbles	1292.61	north-east
GW020547	9.14	13.71	SHLE	Shale grey	1292.61	north-east
GW020547	13.71	91.44	SHLE	Shale black water supply	1292.61	north-east
GW019680	0.00	11.27	CLAY	Clay water supply	1318.39	north-east
GW019680	11.27	16.15	CLAY	Clay shale	1318.39	north-east
GW019680	16.15	44.19	SHLE	Shale hard	1318.39	north-east
GW019680	44.19	44.80	SHLE	Shale water supply	1318.39	north-east
GW019680	44.80	50.29	SHLE	Shale dark	1318.39	north-east
GW019680	50.29	52.42	SHLE	Shale clay seams	1318.39	north-east
GW019680	52.42	53.34	SHLE	Shale water supply	1318.39	north-east
GW020069	0.00	2.13	CLAY	Clay	1340.13	north-east
GW020069	2.13	4.57	CLAY	Clay coloured	1340.13	north-east
GW020069	4.57	7.31	CLAY	Clay shale	1340.13	north-east
GW020069	7.31	8.83	CLAY	Clay sticky water supply	1340.13	north-east
GW020069	8.83	51.20	SHLE	Shale light coloured	1340.13	north-east
GW020069	51.20	59.43	SHLE	Shale dark water supply	1340.13	north-east
GW020069	51.20	59.43	CLAY	Clay seams	1340.13	north-east
GW020069	59.43	60.65	SHLE	Shale dark	1340.13	north-east
GW020069	60.65	63.70	SDSN	Sandstone yellow streaks	1340.13	north-east
GW020069	60.65	63.70	SHLE	Shale	1340.13	north-east
GW020069	63.70	72.54	SHLE	Shale light orange	1340.13	north-east
GW020069	72.54	74.67	CLAY	Clay seams	1340.13	north-east
GW020069	72.54	74.67	SHLE	Shale dark orange water supply	1340.13	north-east
GW020069	74.67	75.59	SHLE	Shale dark orange	1340.13	north-east
GW103764	0.00	0.60	TPSL	Topsoil	1724.74	south
GW103764	0.60	6.40	CLAY	Clay	1724.74	south
GW103764	6.40	11.20	SHLE	Shale	1724.74	south
GW103764	11.20	123.40	SHLE	Shale	1724.74	south
GW103764	123.40	216.40	SDSN	Sandstone	1724.74	south
GW103764	216.40	217.30	SHLE	Shale	1724.74	south
GW103764	217.30	231.60	SDSN	Sandstone	1724.74	south
GW060794	0.00	6.20	CLAY	Clay	1795.46	south
GW060794	6.20	78.10	SLTE	Slate or shale	1795.46	south

GW114593	0.00	0.20	Fill	Concrete	1861.78	south-west
GW114593	0.20	0.50	Silty Clay	Silty Clay ,Firm,Moist,M/Plasticity	1861.78	south-west
GW114593	0.50	0.80	Shale	Shale Weathered,Very Hard	1861.78	south-west
GW114593	0.80	4.00	Shale	Shale,Very Hard,Dry,Dark Brown	1861.78	south-west
GW114593	4.00	7.50	Shale	Shale,Very Hard ,Dry,White	1861.78	south-west
GW114594	0.00	0.12	Fill	Concrete	1871.51	south-west
GW114594	0.12	0.50	Sand	Sand Minor Clay And Shale M/Grained	1871.51	south-west
GW114594	0.50	0.70	Shale	Shale Minor Clay Moist Brown	1871.51	south-west
GW114594	0.70	5.00	Shale	Shale Very Hard,Dry Yellow Brown	1871.51	south-west
GW114594	5.00	7.00	Shale	Shale Very Hard White	1871.51	south-west
GW114591	0.00	0.10	Fill	Concrete	1874.76	south-west
GW114591	0.10	0.50	Clay	Clay With Minor Sand M/Grained	1874.76	south-west
GW114591	0.50	0.90	Clay	Clay Soft , Moist,Low Plasticity	1874.76	south-west
GW114591	0.90	1.20	Shale	Shale Weathered,Very Hard,Dry,Yellowish Brown	1874.76	south-west
GW114591	1.20	3.50	Shale	Shale Very Hard Dry,Yellowish Brown	1874.76	south-west
GW114591	3.50	7.00	Shale	Shale, Very Hard,Dry,White	1874.76	south-west
GW114592	0.00	0.20	Fill	Concrete	1877.55	south-west
GW114592	0.20	0.50	Sand	Sand,M/Grained,Moist Dark Brown	1877.55	south-west
GW114592	0.50	0.80	Shale	Shale With Minor Clay	1877.55	south-west
GW114592	0.80	6.00	Shale	Shale Dry Yellow/Brown	1877.55	south-west
GW114592	6.00	8.00	Shale	Shale White	1877.55	south-west
GW111617	0.00	0.50	CLLM	Clay brown	1959.53	north-west
GW111617	0.50	1.00	SHLE	Shale brown	1959.53	north-west
GW111617	1.00	113.00	SHLE	Shale grey	1959.53	north-west
GW111617	113.00	130.00	SDSN	Sandstone grey	1959.53	north-west
GW111617	130.00	130.20	SDSN	Sandstone grey quartz	1959.53	north-west
GW111617	130.20	141.00	SDSN	Sandstone grey	1959.53	north-west
GW111617	141.00	142.00	SDSN	Sandstone grey quartz	1959.53	north-west
GW111617	142.00	145.00	SDSN	Sandstone grey	1959.53	north-west
GW111617	145.00	149.00	SDSN	Sandstone grey quartz	1959.53	north-west
GW111617	149.00	154.00	SDSN	Sandstone grey	1959.53	north-west
GW111617	154.00	155.00	SDSN	Sandstone grey ,siltstone bands	1959.53	north-west
GW111617	155.00	158.50	SDSN	Sandstone grey	1959.53	north-west
GW111617	158.50	160.00	SDSN	Sandstone grey quartz	1959.53	north-west
GW111617	160.00	161.00	SDSN	Sandstone grey	1959.53	north-west
GW111617	161.00	162.00	SDSN	Sandstone grey ,siltstone bands	1959.53	north-west
GW111617	162.00	190.00	SDSN	Sandstone grey	1959.53	north-west
GW111617	190.00	192.00	SDSN	Sandstone grey ,siltstone bands	1959.53	north-west
GW111617	192.00	198.50	SDSN	Sandstone grey	1959.53	north-west
GW111617	198.50	200.00	SDSN	Sandstone grey quartz	1959.53	north-west
GW111617	200.00	203.00	SDSN	Sandstone grey	1959.53	north-west
GW111617	203.00	209.00	SDSN	Sandstone grey quartz	1959.53	north-west
GW111617	209.00	210.00	SDSN	Sandstone grey	1959.53	north-west

2.2 HYDROGEOLOGY AND OTHER BOREHOLES

Map 5b (500m Buffer)

	On the Property?	Within Record Search Buffer?
Groundwater Vulnerability	Not identified	Not identified
Groundwater Exclusion Zones[1,2]	Not identified	Not identified
Hydrogeologic Unit	Late Permian/Triassic sediments (porous media - consolidated)	Late Permian/Triassic sediments (porous media - consolidated)
Other known borehole investigations	Not identified	Not identified

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

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

Groundwater Dependent Ecosystems

Site	On the Property?	Within Record Search Buffer?
Ecosystems that rely on the Surface expression of Groundwater	Not identified	Not identified
Ecosystems that rely on Subsurface presence of Groundwater	Not identified	Not identified

Table 2.2.1. Other known borehole investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes) (500m buffer)

Borehole ID	Purpose	Project	Client/License	Date Drilled	Depth (m)	Distance (m)	Direction
Not identified	-	-	-	-	-	-	-

Section 3 – Environmental Registers, Licences and Incidents

3.1 CONTAMINATED LAND PUBLIC REGISTER

Map 6 (1000m Buffer)

Contaminated Land Record of Notices

Site Name[2]	Site ID	Address[1]	Notices	Distance (m)	Direction
Not identified	-	-	-	-	-

1. Some addresses do not contain specific street numbers. Records identified as being in the surrounding area have been added for information.
2. Former NSW EPA sites. These sites have been removed from the Record of Notices and/or the Sites Notified lists and are kept here for information purposes only.

Sites Notified as Contaminated to the EPA

Site Name[2]	Address[1]	Activity that caused Contamination	EPA Site Management Class[3]	Distance (m)	Direction
Not identified	-	-	-	-	-

1. Some addresses do not contain specific street numbers. Records identified as being in the surrounding area have been added for information.
2. Former NSW EPA sites. These sites have been removed from the Record of Notices and/or the Sites Notified lists and are kept here for information purposes only.
3. The EPA maintains a record of sites that have been notified to the EPA by owners or occupiers as contaminated land. The sites notified to the EPA and recorded on the register are at various stages of the assessment and/or remediation process. Table 5 outlines the possible management status that can be attributed to a registered contaminated site.

Table 3.3.1. EPA Site Management Class Explanation

EPA Site Management Class	
Under Assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Contamination currently regulated under the CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record.
Contamination currently regulated under the POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).

EPA Site Management Class	
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record.

3.2 POTENTIALLY CONTAMINATED AREAS

Map 6 (1000m Buffer)

Defence Sites

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

*RCIP (Regional Contamination Investigation Program)

Former Gasworks Sites

Site	Location	Distance (m)	Direction
Not identified	-	-	-

PFAS Sites

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

*2km search

3.3 LICENSING UNDER THE POEO ACT

Map 7 (500m Buffer)

Licences

EPL Number	Licence holder	Location Name	Premise Address[1]	Fee Based Activity	Distance (m)	Direction
Not identified	-		-	-	-	

[1]. Some sites do not contain specific addresses. Records identified as being in the surrounding area have been added for information.

Surrendered Licences still Regulated by EPA

Licence Nº	Licence holder	Location Name	Premise Address[1]	Fee Based Activity	Status	Distance (m)	Direction
Not identified	-		-	-	-	-	-

[1]. Some sites do not contain specific addresses. Records identified as being in the surrounding area have been added for information.

Clean Up and Penalty Notices

Location ID	Penalty Nº	Notice Type	Licence holder	Location Name	Premise Address[1]	Distance (m)	Direction
-	Not identified	-	-	-	-	-	-

[1]. Some sites do not contain specific addresses. Records identified as being in the surrounding area have been added for information.

3.4 NATIONAL POLLUTANT INVENTORY (NPI)

Map 7 (500m Buffer)

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

3.5 PUBLIC REGISTER OF PROPERTIES AFFECTED BY LOOSE-FILL ASBESTOS INSULATION

Map 7 (onsite)

Address	Match Found
Not identified	-

Section 4 – Other Potentially Contaminating Activities

4.1 FORMER POTENTIALLY CONTAMINATED LAND

Map 8a (500m Buffer)

Contaminated Legacy Areas

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

Note: This section includes known contaminated areas such as James Hardies Asbestos waste legacy areas, Pasminco Smelter and Uranium processing site.

Derelict Mines and Quarries

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

Historical Landfills

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

Unexploded Ordnance (UXO) Areas

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

4.2 POTENTIALLY CONTAMINATING ACTIVITIES

Map 8b (500m Buffer)

Aviation Fuel Depots/Terminals

Site name	Location	Status*	Distance (m)	Direction
Not identified	-	-	-	-

Cattle Dip Sites

Site name	Location	Status*	Distance (m)	Direction
Not identified	-	-	-	-

Dry Cleaners

Site name	Location	Status*	Distance (m)	Direction
Not identified	-	-	-	-

Fire Rescue Sites

Site name	Location	Status*	Distance (m)	Direction
Not identified	-	-	-	-

Liquid Fuel Depots/Terminals

Site name	Owner	Location	Status*	Distance (m)	Direction
Not identified	-	-	-	-	-

Fire and Rescue Sites

Site name	Location	Status*	Distance (m)	Direction
Not identified	-	-	-	-

Mines and Quarries

Deposit Name	Method	Description	Status*	Distance (m)	Direction
Not identified	-	-	-	-	-

Power Stations

Site name	Owner	Location	Status*	Distance (m)	Direction
Not identified	-	-	-	-	-

Service Stations

Site name	Owner	Location	Status*	Distance (m)	Direction
Not identified	-	-	-	-	-

Substation / Switching Stations

Site name	Owner	Location	Status*	Distance (m)	Direction
Not identified	-	-	-	-	-

Telephone Exchanges

Site name	Location	Status*	Distance (m)	Direction
Not identified	-	-	-	-

Waste Management Facilities

Site name	Owner	Class	Status*	Distance (m)	Direction
Not identified	-	-	-	-	-

Wastewater Treatment Facilities

Site name	Operator	Class	Status*	Distance (m)	Direction
Not identified	-	-	-	-	-

***Status:**
Data is current as when this report was created. However due to the turnover of business locations, some addresses may be former.
Current: business that are operational on the day this report was issued.
Former: business that have been closed or discontinued 1 to 2 years from the day this report was issued. All former sites older than 2 years will be reported in the historical business section in this report.

4.3 CURRENT COMMERCIAL AND TRADE DATA

Map 8c (200m Buffer)

Current Commercial and Trade Data

Site name [1]	Category	Location	Status [2]	Distance (m)	Direction
Not identified	-		-	-	-

[1] Data includes categories associated with potentially contaminating activities. All negligible risk data is not reported.

[2] Status: Data is current as when this report was created. However due to the turnover of business locations, some addresses may be former.
Current: business that are operational on the day this report was issued.
Former: business that have been closed or discontinued 1 to 2 years from the day this report was issued. All former sites older than 2 years will be reported in the historical business section in this report.

Tanks (AST/UST)

ID	Tank type	Description	Status	Distance (m)	Direction
Not identified	-		-	-	-

Note: This is not an exhaustive list of all existing tanks.

4.4 HISTORICAL COMMERCIAL AND TRADE DATA (not mapped)

1932 Historical Commercial & Trade Directory Data

Activity	Name	Address	Positional accuracy	Distance (m)	Direction
Not identified	-	-	-	-	-

1940 Historical Commercial & Trade Directory Data

Activity	Name	Address	Positional accuracy	Distance (m)	Direction
Not identified	-	-	-	-	-

1950 Historical Commercial & Trade Directory Data

Activity	Name	Address	Positional accuracy	Distance (m)	Direction
Not identified	-	-	-	-	-

1965 Historical Commercial & Trade Directory Data

Activity	Name	Address	Positional accuracy	Distance (m)	Direction
Not identified	-	-	-	-	-

1970 Historical Commercial & Trade Directory Data

Activity	Name	Address	Positional accuracy	Distance (m)	Direction
Not identified	-	-	-	-	-

1971 Historical Commercial & Trade Directory Data

Activity	Name	Address	Positional accuracy	Distance (m)	Direction
Not identified	-	-	-	-	-

1974 Historical Commercial & Trade Directory Data

Activity	Name	Address	Positional accuracy	Distance (m)	Direction
Not identified	-	-	-	-	-

1980 Historical Commercial & Trade Directory Data

Activity	Name	Address	Positional accuracy	Distance (m)	Direction
Not identified	-	-	-	-	-

1981 Historical Commercial & Trade Directory Data

Activity	Name	Address	Positional accuracy	Distance (m)	Direction
Sewing Machines-Industrial	Marrickville Sewing Centre Pty Ltd	8 Edith Street Kingswood	address	8.3	south
Sand, Soil & Gravel Supplies	Formosa F	15 Edith Street Kingswood	address	104.3	south-west
Concrete Contractors	Namront	Manning Street Kingswood	street	141.1	south-east
Garage Builders &/or Prefabricators	Namront	Manning Street Kingswood	street	141.1	south-east
Concrete Formwork, Form Ties & Accessories	Michael Concrete Pty Ltd	50 Jones Street Kingswood	address	175.6	south-west
Carriers - Heavy	Sectam Pty Ltd	Jones Street Kingswood	street	198.1	south-west

1990 Historical Commercial & Trade Directory Data

Activity	Name	Address	Positional accuracy	Distance (m)	Direction
Not identified	-	-	-	-	-

1991 Historical Commercial & Trade Directory Data

Activity	Name	Address	Positional accuracy	Distance (m)	Direction
Cranes & Travel Towers - Hire or Servicing	Keystone Crane & Rigging	28 Second Avenue Kingswood	address	111.8	north-west
Rubber &/or Metal Stamps	Bettaprint Rubber Stamps	Cnr Second Avenue and Manning St Kingswood	street	146.3	north-east
Rubber &/or Metal Stamps	Bettaprint Rubber Stamps	Corner Second Avenue and Manning Street Kingswood	street	146.3	north-east
Rubber &/or Metal Stamps	Bettaprint Rubber Stamps	Corner Second Avenue and Manning Street Kingswood	street	146.3	north-east
Rubber &/or Metal Stamps	Bettaprint Rubber Stamps	Corner Second Avenue and Manning Street Kingswood	street	146.3	north-east
Air Conditioning - Commercial & Industrial	Rite-Air Services Pty Ltd	Corner Manning Street and Second Avenue Kingswood	street	146.3	north-east
Refrigeration - Commercial & Industrial - Retail &/or Service	Rite-Air Services Pty Ltd	Corner Manning Street and Second Avenue Kingswood	street	146.3	north-east
Concrete Contractor	Michael's Concreting	50 Jones Street Kingswood	address	175.6	south-west
Paving - Brick	Michael's Concreting	50 Jones Street Kingswood	address	175.6	south-west
Concrete Formwork, Form Tiles & Accessories	Minchella M	50 Jones Street Kingswood	address	175.6	south-west

2005 Historical Commercial & Trade Directory Data

Activity	Name	Address	Positional accuracy	Distance (m)	Direction
Books--Retail	Art Sup	Shop 7 Manning St,KINGSWOOD,NSW 2747,Australia	address	90.6	north-east

Activity	Name	Address	Positional accuracy	Distance (m)	Direction
Fans & Blowers	Hydro Fans Australia Pty Ltd	Unit 2/ 1 Manning St,KINGSWOOD,NSW 2747,Australia	address	92.3	north-east
Fans & Blowers Hydroponics--Equipment & Supplies	Hydrofans Australia Pty Ltd	Unit 1, 2 Manning St,KINGSWOOD,NSW 2747,Australia	address	153.3	north-east
Engineers--Consulting Structural Engineers Building Consultants	Inhouse Consulting Engineers Pty Ltd	26 Edith St,KINGSWOOD,NSW 2747,Australia	address	160.9	south
Towing Services	Abboud's Mr Tilt Towing	52 Jones St,KINGSWOOD,NSW 2747,Australia	address	192	south-west

Note: Directories for the years 1932, 1940, 1950, 1965, 1970, 1980 and 1990 cover the Sydney CBD and greater Sydney area only. Directories for 1971, 1981 and 1991 cover regional NSW, but may also contain data for the Sydney area.

Historical data positional accuracy and georeferencing results explanation

Positional accuracy	Georeferenced	Description
Address	Located to the address level	*When street address and names fully match.*
Street	Located to the street centroid	*When street names match but no exact address was found. Location is approximate.*
Place	Located to the structure, building or complex	*When building, residential complex or structure name match but no exact address was found. Location is approximate.*
Suburb	Located to the suburb area	*When suburb name match but no exact address was found. Location is approximate.*
Not georeferenced	Not found	*When it was not georeferenced, and address could not be found.*

Land Insight and Resources use a number of different address georeferencing methods and characterised them according to the following criteria: completeness (match rates) and positional accuracy. When address do not contain specific street numbers or a match is not found, records identified as being in the surrounding areas are included for reference.

Section 5 - Other Environmental Constraints

5.1 FEDERAL, STATE AND LOCAL HERITAGE

Map 9 (200m Buffer)

Local Environment Plan (LEP) Heritage

Site ID	Site Name	Significance	Class	Distance (m)*	Direction
098	Kingswood Public School	Local	Item - General	92	east
670	Former teacher's residence	Local	Item - General	194	North-east

National Heritage List (NHL)

Site ID	Site Name	Class	Status	Distance (m)	Direction
Not identified	-	-	-	-	-

Register of the National Estate (RNE)

Site ID	Site Name	Class	Status	Distance (m)	Direction
Not identified	-	-	-	-	-

Non-Aboriginal heritage item (Local)

Site ID	Site Name	Class	Status	Distance (m)	Direction
Not identified	-	-	-	-	-

Non-Aboriginal heritage item (SHR)*

Site ID	Site Name	Listing nº	Plan nº	Distance (m)	Direction
Not identified	-	-	-	-	-

*State Heritage Register

Commonwealth Heritage List (CHL)

Site ID	Site Name	Class	Status	Distance (m)	Direction
Not identified	-	-	-	-	-

World Heritage Area (WHA)

Site ID	Site Name	IUCN	Status	Distance (m)	Direction
Not identified	-	-	-	-	-

5.2 NATURAL HAZARDS

Map 10 (500m Buffer)

Bush Fire Prone Land (BLP)

Category	On the Property?	Within Record Search Buffer?
Vegetation Buffer	Not identified	Yes

Fire History

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

Flood Hazard

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

5.3 COASTAL MANAGEMENT (STATE ENVIRONMENTAL PLANNING POLICY)

Map 10 (500m Buffer)

Type	On the Property?	Within Record Search Buffer?
Coastal Wetlands Proximity Area	-	-
Coastal Wetlands	-	-
Coastal Environment Area Map	-	-
Coastal Use Area Map	-	-

Subject area

Transmission Line

Stormwater channel

Sewer Main

Water Main

Pipeline

Sensitive receptors

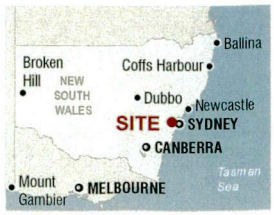
Child care/pre-school

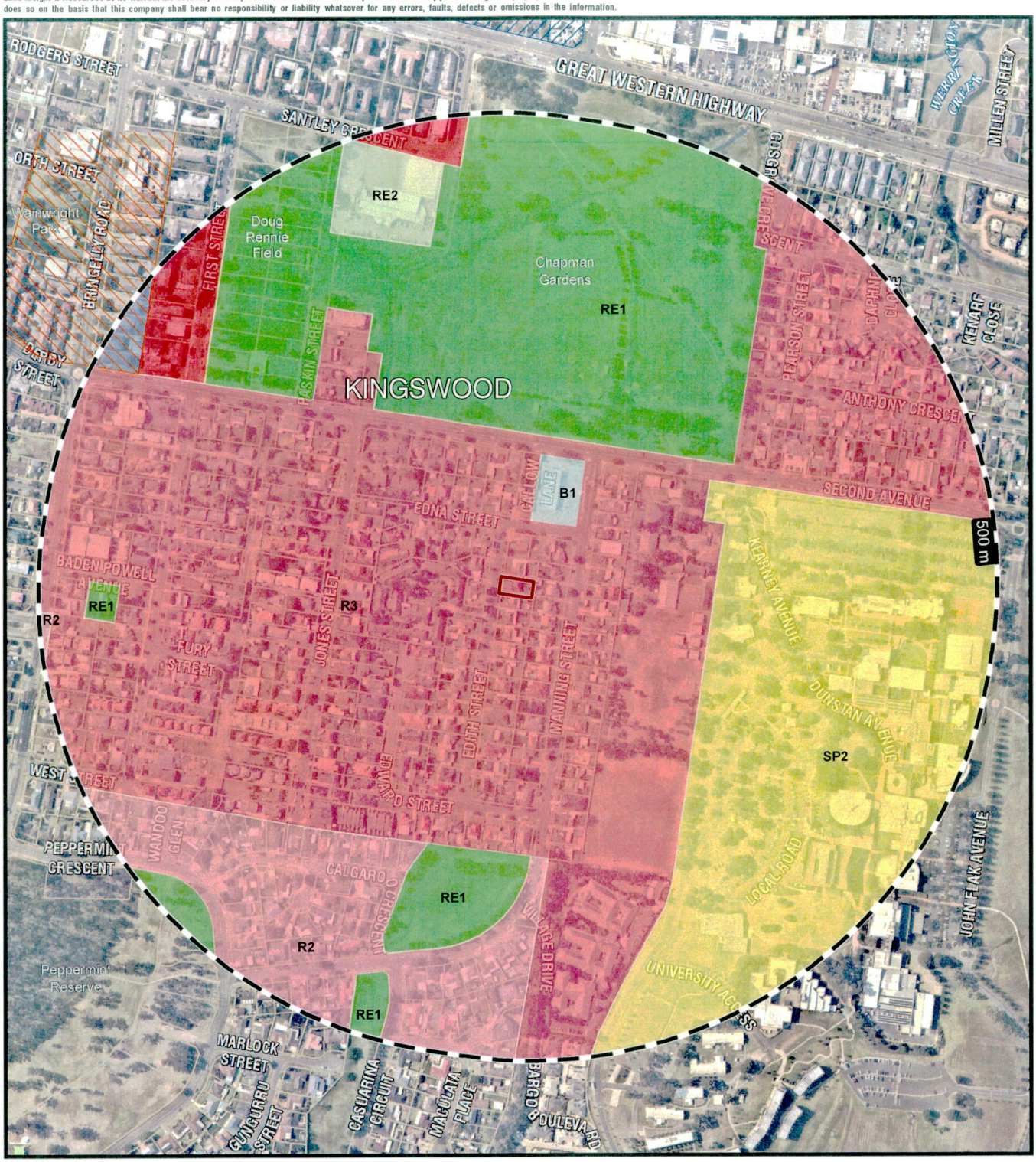
0 100 200 300 400m

SUBJECT AREA AND SENSITIVE RECEPTORS

LAND INSIGHT & RESOURCES

MAP 1 Enviro-Screen





Subject area

Local Provisions

Land Zoning

B1, Neighbourhood Centre

B4, Mixed Use

R2, Low Density Residential

R3, Medium Density Residential

R4, High Density Residential

RE1, Public Recreation

RE2, Private Recreation

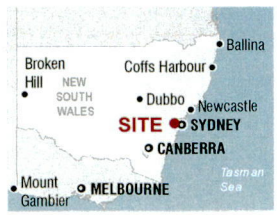
SP2, Infrastructure

0 200 400 600 800m

PLANNING CONTROLS

LAND INSIGHT & RESOURCES

MAP 2 Enviro-Screen



MAP 3a

Enviro-Screen

LAND INSIGHT & RESOURCES

SOIL LANDSCAPES AND SALINITY

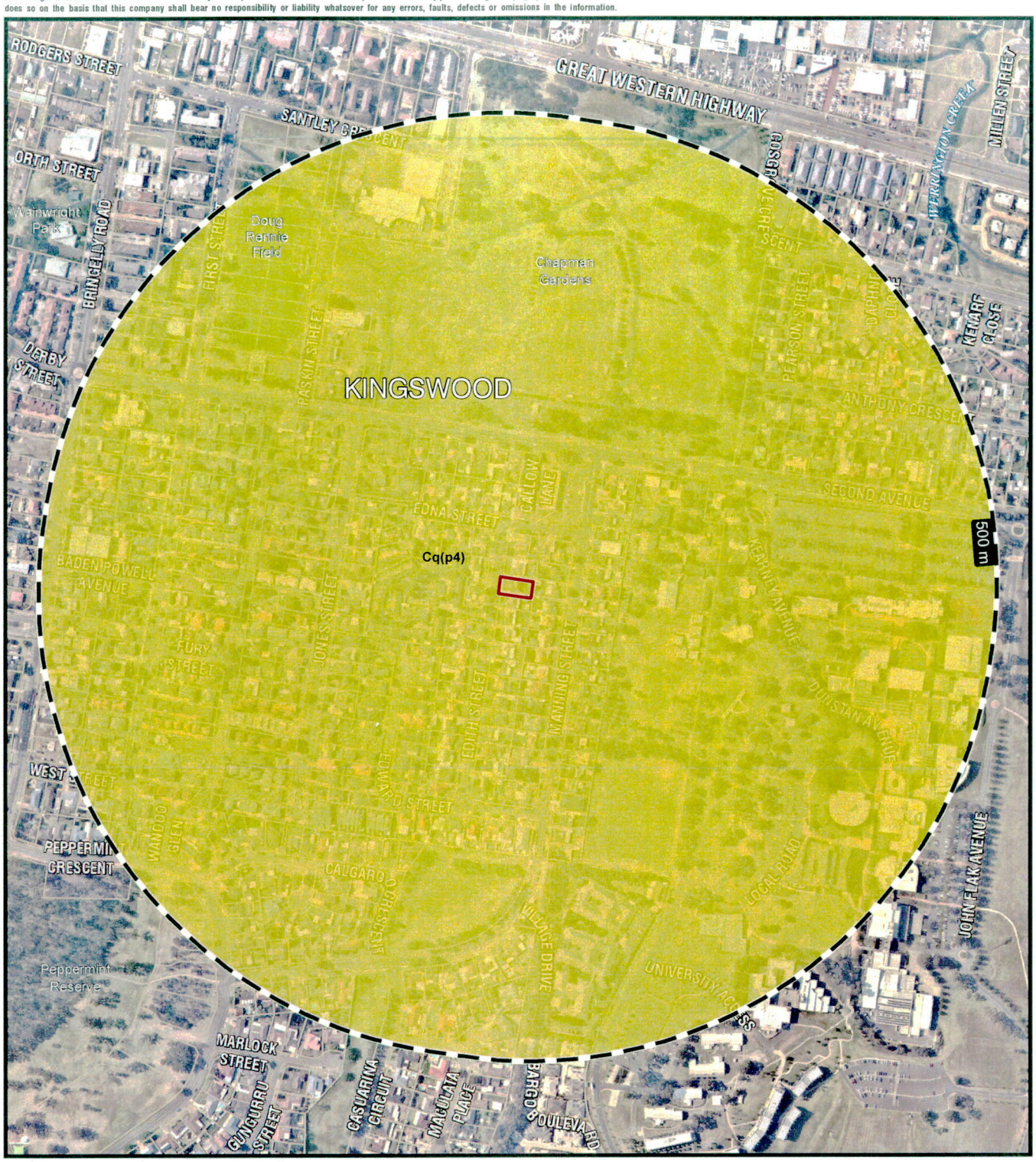
0 200 400 600 800m

Subject area

Hydrologic soil group
C slow rate
D very slow rate

Salinity Hazard
Very High

Soils Landscape
ALSc | ALLUVIAL
ERlu | EROSIONAL



Subject area

ASRIS Atlas of Australian Sulfate Soils

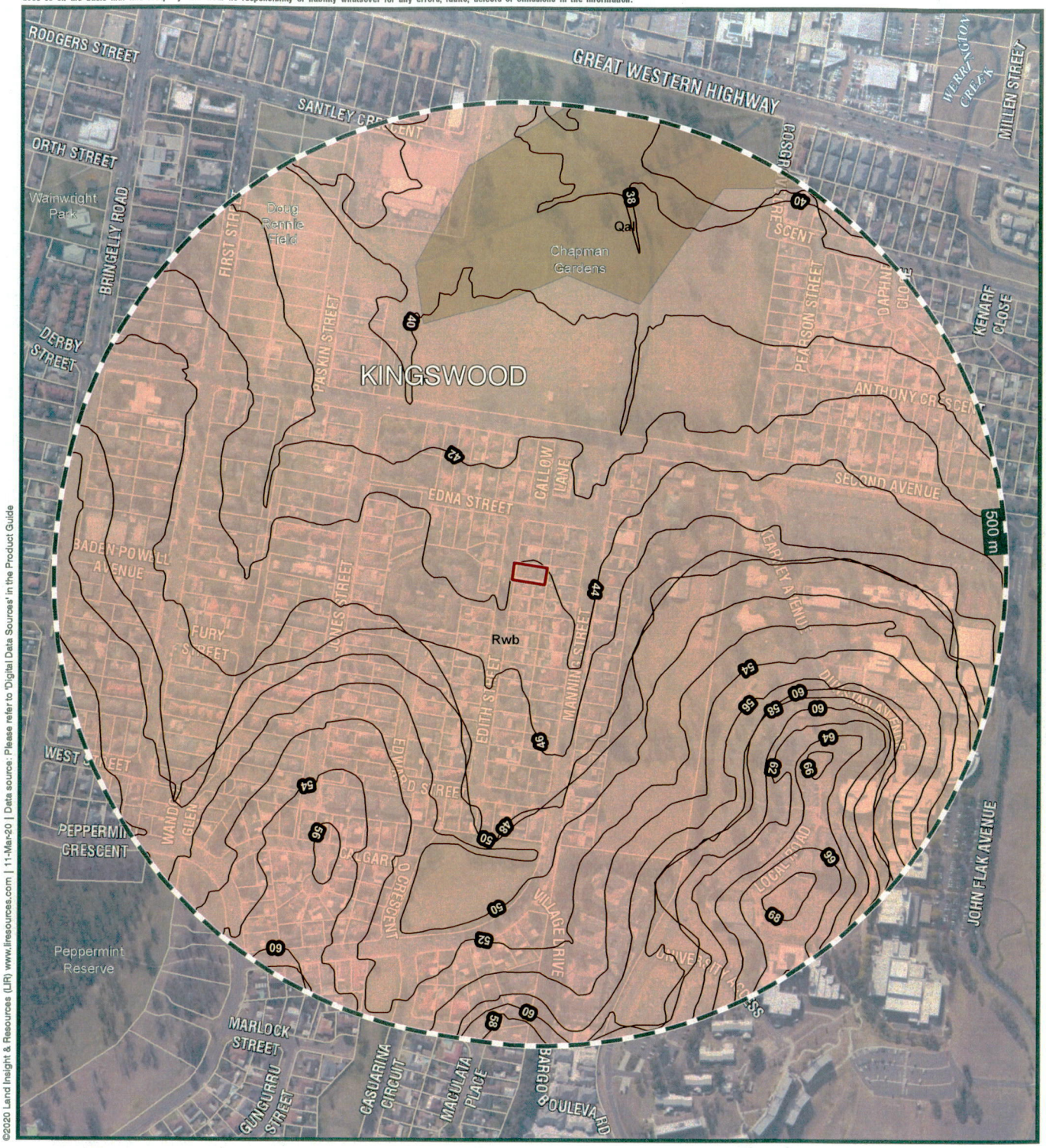
Cq(p4) | ASS in inland lakes, waterways, wetlands and riparian zones

0 200 400 600 800m

ACID SULFATE SOILS

LAND INSIGHT & RESOURCES

MAP 3b Enviro-Screen



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Subject area

20 Topographic contour (m)

1:100 000 Geological Map

Qal | Fine-grained sand, silt and clay

Rwb | Shale, carbonaceous claystone,claystone, laminite, fine to medium-grained lithic sandstone, rare coal and tuff

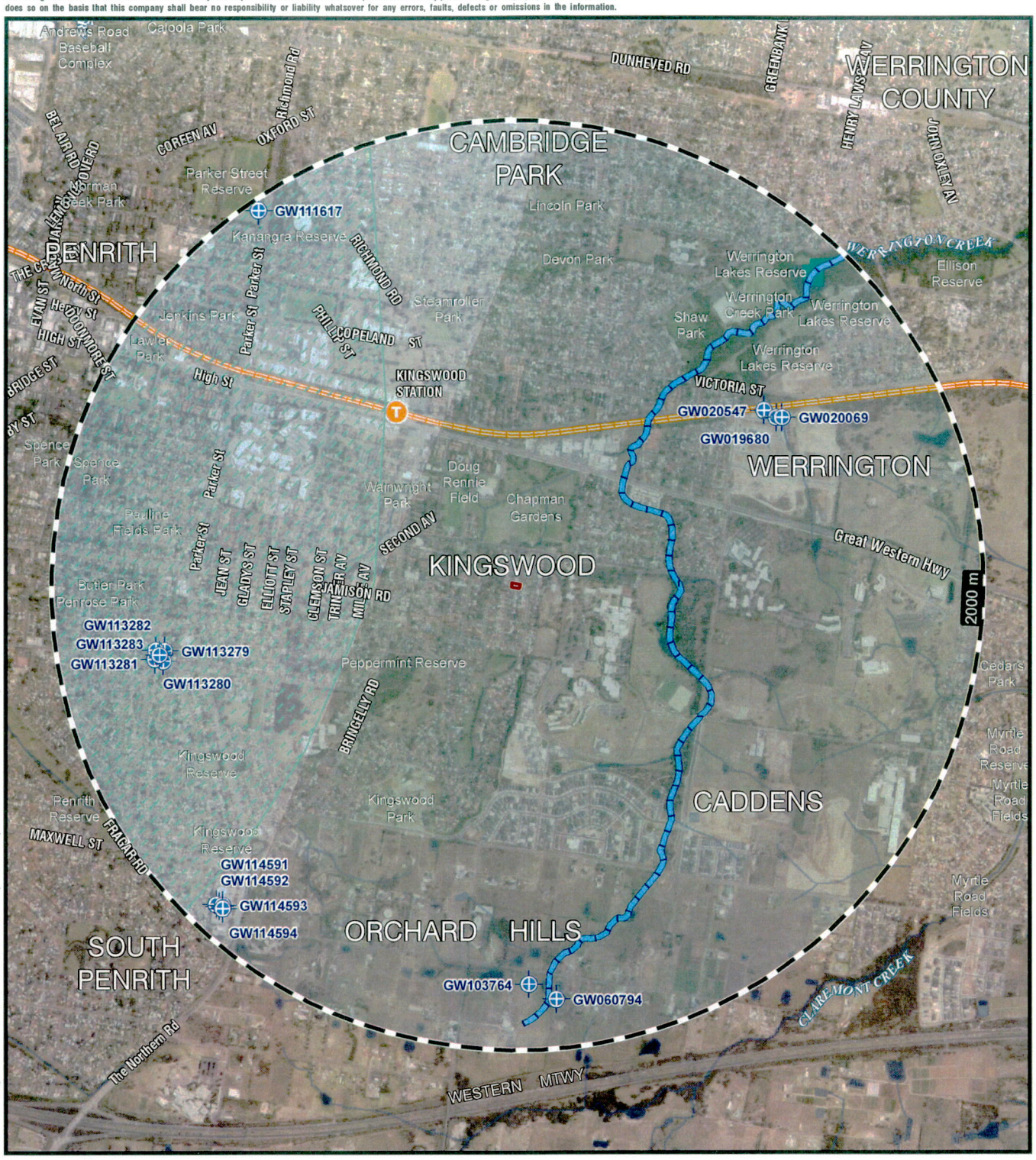
0 200 400 600 800m

GEOLOGY AND TOPOGRAPHY

LAND INSIGHT & RESOURCES

MAP 4

Enviro-Screen



Subject area

Groundwater bores

Protected riparian corridor

Wetlands

Drinking Water Catchments

UPSS Environmentally Sensitive Zone

Aquifer Type

Porous, extensive aquifers of low to moderate productivity

Porous, extensive highly productive aquifers

0 200 400 600 800m

HYDROGEOLOGY AND GROUNDWATER BORES

LAND INSIGHT & RESOURCES

MAP 5a Enviro-Screen

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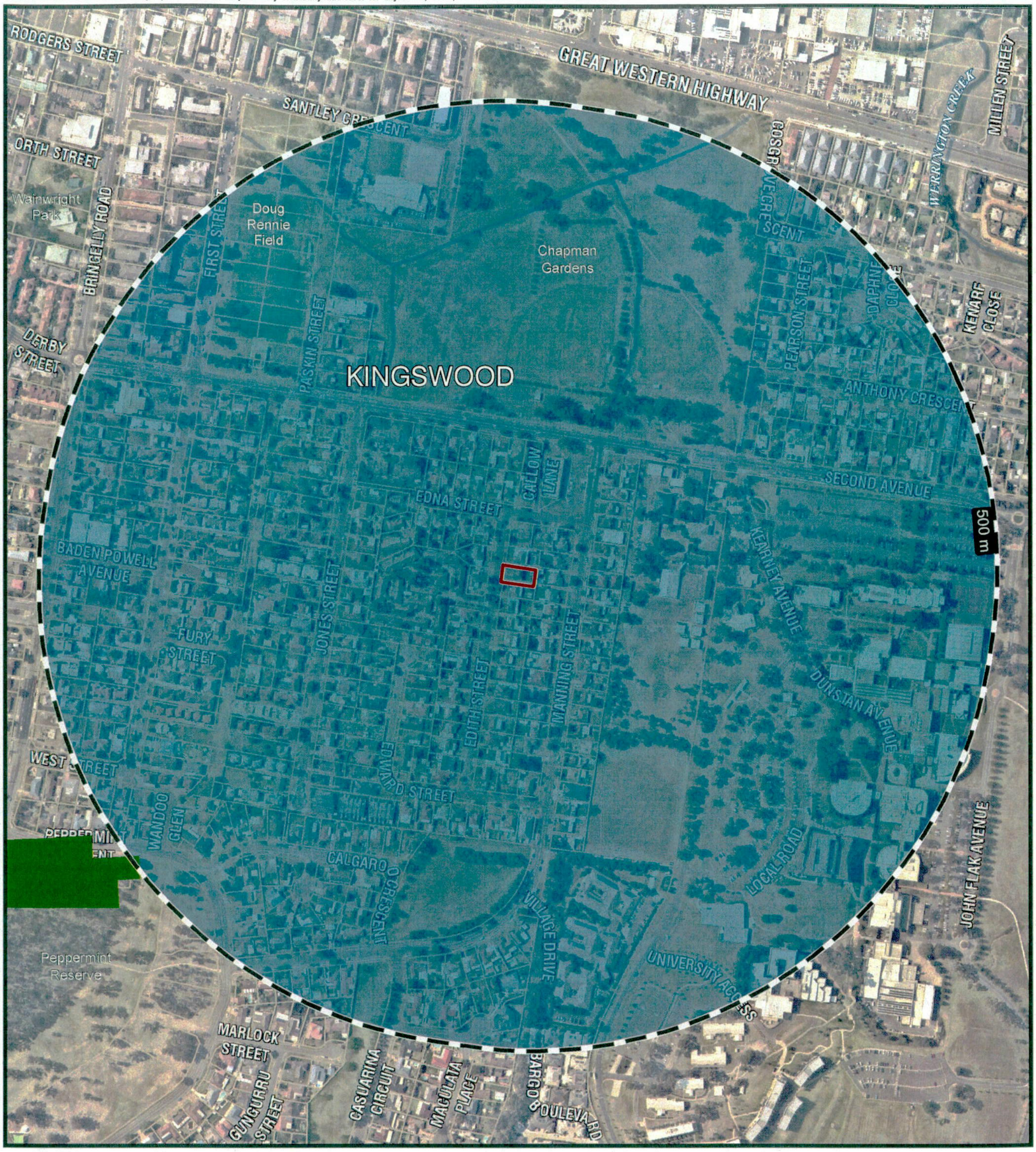

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Subject area

Other borehole/monitoring well location

Hydrogeologic Unit

Likely Subsurface presence of Groundwater (porous - consolidated)

High potential for GW interaction

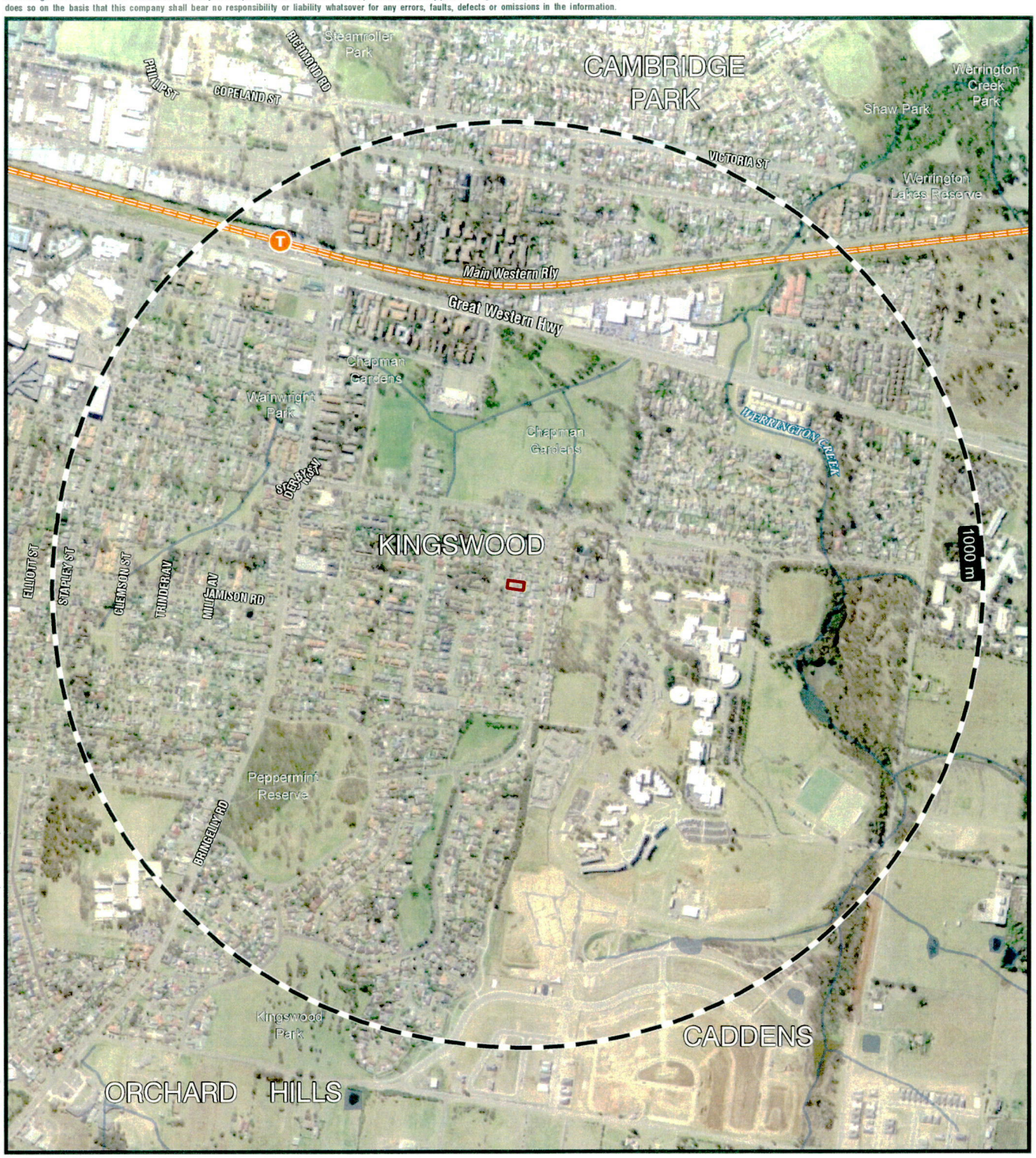
0 200 400 600 800m

HYDROGEOLOGY AND OTHER BOREHOLES

LAND INSIGHT & RESOURCES

MAP 5b

Enviro-Screen



Subject area

Contaminated Land Register (EPA)

- Current - Sites notified as contaminated
- Former - Sites notified as contaminated
- Contaminated Land Record of Notices

Potentially Contaminated Areas

- Defence Sites
- Former Gasworks Sites
- PFAS Sites

0 250 500 750 1,000 1,250 1,500m

CONTAMINATED LAND REGISTER AND POTENTIALLY CONTAMINATED AREAS

LAND INSIGHT & RESOURCES

MAP 6

Enviro-Screen

Subject area

POEO Register

- POEO licences
- Surrendered Licences still Regulated by EPA
- Clean Up and Penalty Notices

NPI Facilities

0 200 400 600 800m

ENVIRONMENTAL REGISTER & LICENCES AND NPI FACILITIES

LAND INSIGHT & RESOURCES

MAP 7 Enviro-Screen

Subject area

Contaminated Legacy Areas

- Contaminated Legacy Areas
- Derelict Mines and Quarries
- Historical (Legacy) Landfills

Unexploded Ordnance (UXO) Areas

- Defence Controlled Area
- UXO Area: Substantial Occurence
- UXO Area: Slight Occurence
- UXO Area: Other

0 200 400 600 800m

FORMER POTENTIALLY CONTAMINATED LAND

LAND INSIGHT & RESOURCES

MAP 8a

Enviro-Screen

Subject area

Aviation fuel depots	Fire Rescue sites	Power stations	Telephone exchanges
Cattle dip	Liquid fuel depots / terminals	Service stations	Waste management facilities
Dry cleaners	Mine/quarry	Substation locations	Wastewater Treatment Facility

Current: business that are operational on the day this report was issued.
Former: business that have been closed or discontinued 1 to 2 years from the day this report was issued. All former sites older than 2 years will be reported in the historical business section in this report.

0 200 400 600 800m

POTENTIALLY CONTAMINATING ACTIVITIES

LAND INSIGHT & RESOURCES

MAP 8b Enviro-Screen

Subject area

Commercial & Trade Directory

- Other potentially contaminating activities
- Former potentially contaminating activities

Tanks

- Aboveground Storage Tank - Current
- Aboveground Storage Tank - Former
- Underground Storage Tank - Current
- Underground Storage Tank - Forrmer
- Unknown

*This is not an exhaustive list of all tanks.

0 100 200 300 400m

CURRENT COMMERCIAL AND TRADE DATA

LAND INSIGHT & RESOURCES

MAP 8c Enviro-Screen

Subject area

Federal, State and Local Heritage

- Heritage conservation Area (LEP)
- Register of the National Estate (RNE)
- National Heritage List (NHL)
- Non-Aboriginal heritage item (Local)
- Non-Aboriginal heritage item (SHR)
- Commonwealth Heritage List (CHL)
- World Heritage Area (WHA)

0 100 200 300m

HERITAGE

LAND INSIGHT & RESOURCES

MAP 9

Enviro-Screen

Subject area

Bush Fire Prone Land
- Vegetation Buffer
- Vegetation Category 1

SEPP Coastal Management
- Proximity Area for Coastal Wetlands
- Proximity Area for Littoral Rainforests
- Littoral Rainforests
- Coastal Wetlands
- Coastal Environment Area Map
- Coastal Use Area Map

0 200 400 600 800m

NATURAL HAZARDS

LAND INSIGHT & RESOURCES

MAP 10

Enviro-Screen

EHO CONSULTING
ENVIRONMENTAL HAZMAT OCCUPATIONAL

Appendix I – PID Calibration Certificate

Calibration & Service Report
Gas Monitor

Company:	Active Environmental Solutions Hire	**Manufacturer:**	RAE Systems	**Serial #:**	592-915461
Contact:	Aleks Todorovic	**Instrument:**	MiniRAE 3000	**Asset #:**	-
Address:	2 Merchant Avenue	**Model:**	PGM 7320	**Part #:**	-
	Thomastown Vic 3074	**Configuration:**	VOC	**Sold:**	-
Phone:	03 9464 2300 | **Fax**: 03 9464 3421	**Wireless:**	-	**Last Cal:**	-
Email:	Hire@aesolutions.com.au	**Network ID:**	-	**Job #:**	-
		Unit ID:	-	**Cal Spec:**	Std

Item	Test	Pass/Fail	Comments
Battery	Li Ion	✓	
Charger	Charger, Power supply	✓	
	Cradle	✓	
Pump	Flow	✓	>500 mL/min
Filter	Filter, fitting, etc	✓	
Alarms	Audible, visual, vibration	✓	
Display	Operation	✓	
PCB	Operation	✓	
Connectors	Condition	✓	
Firmware	Version	✓	2.16
Datalogger	Operation	✓	
Monitor Housing	Condition	✓	
Case	Condition/Type	✓	
Sensors			
Oxygen		-	
LEL		-	
PID	10.6eV	✓	
Toxic 1		-	
Toxic 2		-	
Toxic 3		-	
Toxic 4		-	
Toxic 5		-	

Engineer's Report

Setup, service and calibration for hire

Calibration Certificate

Sensor	Type	Serial No:	Span Gas	Concentration	Traceability Lot #	CF	Reading	
							Zero	Span
Oxygen								
LEL								
PID	10.6eV	23030045VC	Isobutylene	100 PPM	2440-3-1	1	0	100 PPM
Toxic 1								
Toxic 2								
Toxic 3								
Toxic 4								
Toxic 5								

Calibrated/Repaired by: Milenko Sisic

Date: 26/08/2019

Next due: 26/02/2020

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