

Preliminary contamination investigation

18 to 26 Lambert Street, Bathurst NSW



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Summary report

Introduction

Residential units are proposed for 18 to 26 Lambert Street, Bathurst NSW. The site area is approximately 3,700m². The site currently contains a large shed comprising commercial land-use. The site surface is primarily concrete with some grassed areas. The shed and driveways are proposed to be removed from the site. Fill has been historically applied to the site.

A preliminary contamination investigation is required to assess the suitability for residential land-use.

Scope

The objective was to identify past potentially contaminating activities, identify potential types of contamination, discuss the site condition, provide a preliminary assessment of site contamination and assess the need for further investigation to determine suitability for residential/industrial land-use.

Summary

An inspection of the site was made on 24 April 2024. The site is currently operating as water shop selling pool equipment, pumps and industrial supplies.

Surface cover over the site comprises concrete hardstand in the driveways adjacent the main building. The western section of the site was an elevated open area comprising part hardstand gravel and part vegetation. Vegetation comprised grasses and broadleaved weeds. The western section was used as car park and for general storage of foreign materials.

Potential areas of environmental concern identified from the site inspection were:

- Hydrocarbon discolouration present in the concreted open drain along the eastern boundary of the site. The discolouration is potentially due to overflow of the oil-water separator located at the adjacent mechanical shop to the south west (AEC1).
- Minor hydrocarbon discolouration identified in the car park area to the west of the site. The discolouration area is minor expected to impact the shallow soil surface (AEC2).
- Potential asbestos containing material from a small fence located in the south eastern section of the site (AEC3). No cement sheeting fragments were identified on the site surface.

Thirteen boreholes were drilled on a 15m systematic grid pattern in accessible areas of the site. The boreholes were drilled to enable soil profile descriptions and soil sampling. Twenty-seven soil samples were collected from the site to allow assessment of fill and natural soils. A minimum of two samples were collected from each borehole at representative depths. The samples were evaluated for heavy metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAH), organochlorine pesticides (OCP), organophosphorous pesticides (OPP) and asbestos in soil.

One sample was collected from the discharge area of the open drain. The sample was collected from 0-100mm depth and analysed for heavy metals, TRH, BTEXN and PAH.

Soils on-site comprised fill of brown, dark brown, black and grey clayey sand to depths up to 0.7m and natural soil comprising dark brown to brown silty clay to 1.5m. Soils from the fill layer from location BH1 presented slight odour of hydrocarbon and discolouration.

Levels of benzo(a)pyrene exceeded the ESL thresholds for a number of samples from the general site. The levels of all other contaminants of concern were less than the adopted thresholds across the general site.

The sample from the eastern discharge potential area of environmental concern exceeded the EIL thresholds for zinc, the ESL thresholds for TRH (C16-C34) and benzo(a)pyrene and the HIL thresholds for carcinogenic PAH.

The sample was collected outside the investigation area and may be indicative of the contamination status of the drain discharge, however, it may receive contamination inputs from sources offsite. It is not known if hydrocarbon impacts are occurring beneath the concrete drain.

The potential ecological receptor identified on-site is vegetation. The vegetation did not appear to be impacted by the exceedances in the sampling areas. Other areas of the site were covered by concrete.

Recommendations

Additional investigations should be undertaken:

- In currently inaccessible areas at the time concrete is removed. The additional investigation should include visual inspection. Samples should be collected if evidence of contamination is suspected.
- Across area AEC1 including under the existing drain. Additional sampling should be undertaken adjacent sampling location HS1 in order to delineate and characterise the identified contamination.

Remediation should be undertaken over areas AEC2 and AEC3. The remediation works should be undertaken in accordance with a Remedial action plan (RAP).

Additional remediation may be required in AEC1 following characterisation of existing contamination.

Foreign materials stored in the car park should be removed as they are considered an amenity issue.

An unexpected finds procedure should be adopted for site development works.

Contents

page

1.	Introduction.....	6
2.	Objectives.....	6
3.	Scope of work.....	6
4.	Site identification.....	6
5.	Site history.....	7
6.	Site condition and environment.....	11
7.	Conceptual site model.....	13
8.	Data quality objectives (DQO).....	16
9.	Sampling analysis plan and sampling methodology.....	17
10.	Quality assurance and quality control.....	20
11.	Assessment criteria.....	20
12.	Results and discussion.....	22
13.	Site characterisation.....	28
14.	Conclusions and recommendations.....	29
15.	Report limitations and intellectual property.....	30
16.	References.....	32
	Figures.....	33
	Figure 1. Locality map	
	Figure 2. Aerial image (2023) and site layout	
	Figure 3. Sampling locations	
	Figure 4. Exceedances	
	Figure 5. Photographs of the site	
	Appendices.....	39
	Appendix 1. Sample analysis, quality assurance and quality control (QAQC) report	
	Appendix 2. Field sampling log	
	Appendix 3. Borelogs	
	Appendix 4. Soil analysis results – SGS report number SE264336 and chain of custody form	
	Appendix 5. Soil sampling protocols	
	Appendix 6. Unidentified finds procedure	
	Appendix 7. EW Testing services report	

1. Introduction

Residential units are proposed for 18 to 26 Lambert Street, Bathurst NSW. The site area is approximately 3,700m². The site currently contains a large shed comprising commercial land-use. The site surface is primarily concrete with some grassed areas. The shed and driveways are proposed to be removed from the site. Fill has been historically applied to the site.

A preliminary contamination investigation is required to assess the suitability for residential land-use.

2. Objectives

The objective of the investigation was to determine suitability of the site for the proposed residential land-use.

3. Scope of work

Barnson Pty Ltd was commissioned by B.A.R. Constructions Pty Ltd to undertake a preliminary contamination assessment, in accordance with the contaminated land management planning guidelines, from the *Contaminated Land Management Act 1997* and the *State Environmental Planning Policy (Resilience and Hazards) 2021*, of 18 to 26 Lambert Street, Bathurst NSW. The objective was to identify past potentially contaminating activities, identify potential contamination types, discuss the site condition, provide a preliminary assessment of site contamination and assess the need for further investigation or suitability for residential land-use.

4. Site identification

Address	18 to 26 Lambert Street Bathurst NSW
Deposited plans	Lot 12 DP1066401
Latitude and longitude	-33.4284° 149.5789°
Geographic coordinates	55H E739767m N6298239m
Client	B.A.R. Constructions Pty Ltd
Owner	Lambo Pty Ltd
Current occupier	Town and Country Water Shop
Area	Approximately 3,770m ² Accessible areas 2,500m ²
Local government area	Bathurst Regional Council
Current zoning	E4 – General Industrial R1 – General Residential (Bathurst LEP 2014)
Trigger for investigation	Change of land-use
Locality map	Figure 1

5. Site history

5.1 Land-use

The site is current operating as Town and Country Water Services and includes a retail area, offices and a workshop.

5.2 Summary of council records

The investigation area is not identified on the Bathurst Regional Council LUIS database.

Bathurst Local Environmental Plan (LEP 2014) has the site mapped as Heritage Conservation Area with local significance.

A Section 10.7 planning certificate was obtained for Lot 12 DP1066401 Bathurst NSW on 17 May 2024. Bathurst Regional Council has not received notice under the *Contaminated Land Management Act 1997* that the land is:

- significantly contaminated
- subject to a management order
- subject of an approved voluntary management proposal
- subject to an ongoing maintenance order
- subject to a site audit statement.

5.3 EPA databases

The investigation area is not listed on the NSW EPA register of contaminated sites (17 May 2024) or sites notified to the EPA (8 May 2024).

Six contaminated sites have been identified on the sites notified to the EPA register within 1km of the site. The sites relate to a range of activities and include:

- Former Shell Depot Bathurst located at 56 Bant Street, Bathurst approximately 700m south west of the site.
- Bathurst Rail Fabrication Centre located at 34 Alpha Street, Bathurst approximately 300m east of the site.
- Former Caltex depot Bathurst located at 114 Howick Street, Bathurst approximately 915m north east of the site
- Former Mobil Depot located at 1 Lambert Street, Bathurst approximately 120m east of the site.
- Crago Mill site located at 2a Piper Street, Bathurst approximately 200m east of the site.
- Former Gasworks located at 71 Russell Street, Bathurst and approximately 800m northeast of the site.
- Former Mobil Depot at lower Russell Street, Bathurst and 750m northeast of the site.

The EPA has completed assessment of the sites and has determined that regulation under the CLM Act is not required for most of the sites.

The Former Gasworks site requires regulation under the CLM Act. The Gasworks is also listed in the EPA register of contaminated sites. The most recent register from 2015 informs the completion of the voluntary management proposal (notice 201517-7-02).

Contamination from the listed sites is not expected to be impacting on the site.

5.4 Safework NSW Storage of hazardous chemicals

A search of the SafeWork dangerous goods database was considered not necessary as fuel storage infrastructures are not expected to be located on-site.

5.5 POEO public register

No current or delicensed and former licensed activities under the POEO Act 1997 have been identified for the site.

One site listed on the NSW EPA POEO public register have been identified within 1km. The Former Gasworks located at 71 Russell Street, approximately 800 m NE of the site. A clean-up notice has been issued for the site in February 2024. Contamination from the Former Gasworks is not expected to impact the site due to the distance from the investigation area.

5.6 Other government agency databases

The site is not listed on the following databases:

- National Waste Management Site database
- National Liquid Fuel Facilities database
- The NSW Government PFAS Investigation Program
- Defence PFAS Investigation and Management Program
- Airlservices Australia National PFAS Management Program

Several service stations were identified within 1 km on the National Liquid Fuel Facilities database:

- Corner of Rocket Street and Bant Street approximately 260 m west of the site
- Corner of William Street and Keppel Street approximately 900m northeast of the site
- Corner of Russel Street and Bentinck Street 880 m northeast of the site

5.7 Sources of information

Site inspections 24 April 2024 by Felipe Canavez of Barnson Pty Ltd

NSW EPA records of public notices under the CLM Act 1997

Soil and geological maps

Aerial images

Bathurst LEP 2014

5.8 Review of historic aerial photographs, maps and plans

Year	Visual observations on site and surrounding land
1943	Land-use appears to be residential, the investigation area was subdivided in smaller lots. What appears to be a dwelling is evident in the north eastern section of the site. Trees and a potential backyard are evident in the south western section. Adjacent land-use is residential to the north, west and south. Lambert Street is located to the north east. Areas of open space and the railway line are located to the east. The image presents low resolution limiting interpretation.
1964	No obvious changes identified on-site or in adjacent land.
1972	No obvious changes identified on-site or in adjacent land.
1984	The existing shed has been built and change to commercial land-use is expected. Surface cover adjacent the shed appears to be concrete. An additional shed is identifiable adjacent to the site to the south west. Mainly residential land-use is identifiable to the north and west. Land use to the south and east appears to be mainly commercial comprising large buildings and sheds.
1989	An additional structure is evident on-site to the west of the main shed. The structure was confirmed to be a washing bay.
1993	Foreign materials appear to have been stored in the south western section of the site.
1998	No obvious changes identified on-site or in adjacent land.
2003	No obvious changes identified on-site or in adjacent land.

Year	Visual observations on site and surrounding land
2012	The washing bay is no longer visible.
2014	The open area to the west has been used for general storage and as a car park.
2017	No significant changes evident on the site.
2019	No significant changes evident on the site.
2020	No significant changes evident on the site.
2021	No significant changes evident on the site.
2022	No significant changes evident on the site.
2023	No significant changes evident on the site.

5.8.2 Topographic maps

The Bathurst 1985 topographic map based on 1984 aerial photography and field revision depicts the site as a built-up area.

The current topographic map (SIX Maps) depicts the site as built up.

5.8.3 Historical parish maps

A search of historical parish maps of the City of Bathurst, parish of Bathurst, County of Bathurst was undertaken. Parish maps from 1860 to 1972 depicts the site as Allotment 3, Section 83 owned by Mr J Shore and part Allotment 6 Section 112 owned by Mr CW Farrel.

5.8.4 Title search

Date of Acquisition	Registered Proprietor(s) & Occupations where available
22.12.1927	John Boyd (Agent) and his deceased estate
12.12.1947	Keith Arnold Rowling (War Pensioner)
02.11.1951	Boleslavs Vasilevskis (Bootmaker)
15.05.1980	Tablelands Building Company Pty Limited
31.12.1998	Bolam Property Investments Pty Limited
12.06.2003	Bapal No. 11 Pty Ltd now Town and Country Water Shop Pty Ltd
13.10.2011	TCWS (Bathurst) Pty Limited
11.01.2021	# Lambo Property Pty Ltd

5.9 Interview with current occupants

The current business manager informed that the site has been operating as a water shop since 2004 and previous land-use comprised mostly hardware stores. The infrastructure located at the western section of the site was formerly used as a washing bay and was removed around 2010.

5.10 Chronological list of site uses

A review of historical aerial photographs and title search identified the land-use on-site prior to 1980 was residential. The main shed existing on site is expected to have been built in the late 1970's or early 1980's. Past land-use was as hardware shop. A water shop has been operating on-site since 2004.

5.11 Heritage listings

The site is not listed on the following government heritage databases:

- Commonwealth Heritage List
- National Heritage List
- State Heritage Register

- Local Environmental Plan (Bathurst LEP 2014)

The site is identified as being within 1km of several general items in the Bathurst LEP (2014) heritage map. The sites include several historical structures, buildings and dwellings across Bathurst township.

Three items are listed on the State Heritage Register within 1km of the site. The sites are Ben Chifley's House (Listing N. 01657), Bathurst Railway Station and Yard Group (Listing No. 01078) and Bathurst Old School of Arts Library Collection (Listing No. 01712).

No items are listed on the Commonwealth Heritage List and National Heritage List.

5.12 Buildings and infrastructure

The main shed located in the central section was part plastering walls and part corrugated metal. The slab is concrete. Concrete driveways are located to the north west and south eastern sections of the shed. An open drain runs across the south eastern boundary of the site.

A concrete ramp provides access to the western section of the site comprising an elevated open area used as car park and general storage. A footprint of an existing structure was located in the carpark area. The former structure was reportedly a washing bay. The washing bay area was expected to be covered in concrete.

The investigation area is partially fenced. A small fence comprising corrugated cement sheeting was located in the south eastern section of the site.

5.13 Spills, losses or discharges

No records for spills or losses on the site were available. No records for discharges to land, water or air were available.

The open drain located across the south eastern boundary of the site presented hydrocarbon discolouration potentially due to overflow of material stored in an oil-water separator located in the mechanical shop to the south west of the investigation area.

Machinery was identified stored outside of the investigation area in a covered area adjacent the south eastern boundary of the site. Evidence of oil leak was identified under the stored equipment.

5.14 Relevant complaint history

Nil

5.15 Previous investigations

None known

5.16 Historical neighbouring land-use

North – Residential

South – Residential, commercial/industrial

East – Lambert Street, commercial/industrial

West – Residential

Historical neighbouring commercial land-uses may have impacted on the site.

5.17 Contaminant sources

Potential exists for contaminating activities to have been undertaken on site which may impact on the suitability for the proposed land-use. Fill may have been placed on the site as part of site development works. The source of fill is not known.

The site general long-term land-use and storage of equipment and foreign materials may have resulted in the application of contaminants. The north western open area comprised a former washing bay and is currently used as a car park and for general storage.

Hydrocarbon discolouration was identified in the open drain over the south eastern section of the site (AEC 1). The staining appears to be a spill from the adjacent oil-water separator.

A small area of discolouration potentially due to leak from a car engine was identified in the car park area (AEC 2).

A fence containing cement sheet potentially containing asbestos was identified in the south eastern section of the site (AEC 3).

5.18 Contaminants of concern

Based on the historical land-use, the contaminants of concern over the general site and fill application are:

- Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury)
- Total recoverable hydrocarbons (TRH)
- Benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN)
- Polycyclic aromatic hydrocarbons (PAH)
- Organochlorine pesticides (OCP)
- Organophosphorous pesticides (OPP)
- Asbestos

Contaminants of concern over potential areas of environmental concern are:

- Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury)
- Total recoverable hydrocarbons (TRH)
- Benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN)
- Polycyclic aromatic hydrocarbons (PAH)
- Asbestos

5.19 Integrity assessment

The site history was obtained from site inspections and history review. The information is consistent with the current site condition and to the best of the assessor's knowledge is accurate.

6. Site condition and environment

6.1 Site inspection

The site was inspected by Felipe Canavez of Barnson Pty Ltd on 24 April 2024.

6.2 Land-use

The site is current operating as Town and Country Water Shop and includes a retail area, offices and workshop. The western section of the site was an open area used as a car park and for general storage of foreign materials.

6.3 Current neighbouring land-use

North – Residential, Commercial

South – Commercial/industrial including mechanical shop

East – Lambert Street, commercial/industrial

West – Residential

Current commercial neighbouring land-use may potentially impact the contamination status on the site.

6.4 Surface cover and vegetation

Surface cover over approximately 70% of the site comprised concrete slab with average thickness of 150mm. The western section of the site was an elevated open area comprising part hardstand gravel and part vegetation. Vegetation coverage was approximately 50% comprising grasses and broadleaved weeds.

6.5 Evidence of visible contamination

Fill from unknown sources was present under the concrete slab and in the unsealed area to variable depths.

Hydrocarbon discolouration was present in the open drain across the south eastern section of the site (AEC1). The staining appears to be from a potential overflow of the oil-water separator box located in the adjacent mechanical shop to the south. The area of spilling is approximately 30m². Soils from the layer of fill of the adjacent borehole location BH1 presented slight odour of hydrocarbon and discolouration.

Minor discolouration was identified in the car park area to the west of the site (AEC 2). The discolouration area is about 1m² and expected to impact the shallow soil surface.

A fence suspected of containing asbestos cement sheet was identified in the south eastern section of the site (AEC3). The fence is less than 10m² in area.

Foreign materials including timber pallets, metal, pipes and equipment were identified in the western section of the site.

Drums labelled as hydrochloric acid were identified in the car park area. A palacon labelled as Fullabond TW26 was identified in the open area, the material is used as a laminating adhesive. No stained areas were identified around the drums and palacon. The material was in good condition and not considered a potential source of contamination.

6.6 Topography

The site is located on a lower slope with a very gentle slope of 1% to the south east. The western section is approximately 1m above the general site level.

6.7 Soils and geology

The site is within the Bathurst Soil Landscape. Soil in the Bathurst Soil Landscape consists of Non-calcic Brown Soils with Yellow Solodic Soils. Soils have formed on Bathurst Granite. Parent materials consist of *in situ* alluvial-colluvial materials derived from the above parent rock (eSPADE, 2024).

Soils on the site comprised fill of brown, dark brown, black and grey clayey sand to depths up to 0.7m and natural soil comprising dark brown to brown silty clay to 1.5m.

6.8 Water

6.8.1 Surface water

Surface water on the site is expected to flow east towards the local stormwater system. The stormwater system is expected to discharge into Queen Charlottes Creek located approximately 600m to the south-east. Queen Charlottes Creek is a tributary of the Macquarie River located approximately 1.2km north east of the site.

6.8.2 Groundwater

No groundwater bores were identified on the site on the NSW Government Water NSW website (2024). Ten registered groundwater bores are identified within 500m of the site on the NSW Government Water NSW website (2024). The bores are licenced for monitoring. Water-bearing zones (WBZ) for bores which information is available were from 5.4m to 9.0m in sand, sandy clay, ash fill and gravel. Standing water levels were from 1.2m to 8.3m. The monitoring bores are associated with the Railway Precinct.

Groundwater No.	Date drilled	Location	SWL (m)	Use	Status
GW803182	14/10/2002	278m E	5.4	Monitoring	Unknown
GW801269	3/10/2000	371m E	8.2	Monitoring	Unknown
GW801267	17/05/2000	371m NE	4.0	Monitoring	Unknown
GW801268	3/10/2000	371m NE	5.7	Monitoring	Unknown
GW803183	14/10/2002	388m E	3.9	Monitoring	Unknown
GW801266	14/05/1999	388m NE	5.0	Monitoring	Unknown
GW801265	14/05/1999	388m NE	5.0	Monitoring	Unknown
GW801264	14/05/1999	388m NE	1.2	Monitoring	Unknown
GW803184	15/10/2002	388m SE	8.3	Monitoring	Unknown
GW804015	18/06/2002	464m NE	5.4	Monitoring	Unknown

6.9 Evidence of possible naturally occurring contaminants

No natural sources of polycyclic aromatic hydrocarbons (PAH) were identified.

The site is not mapped as an acid sulphate soil risk (State Government of NSW and Department of Planning, Industry and Environment 1998).

The site is not mapped as a geological unit with asbestos potential (State Government of NSW and Department of Regional New South Wales 2015).

6.10 Environmentally sensitive features or habitats

The site is located approximately 600m north west of Queen Charlottes Creek. The creek discharges into the Macquarie River. The creek and river are considered be highly disturbed ecosystems due to agricultural and residential upstream land-uses.

6.11 Integrity assessment

The site history was obtained from a site inspection and history review. The information is consistent with the current site condition and to the best of the assessor's knowledge is accurate.

7. Conceptual site model

7.1 Contaminant sources

Potential exists for contaminating activities to have been undertaken on site which may impact on the suitability for the proposed land-use. Fill may have been placed on the site as part of site development works. Source of fill is not known.

Potential contaminants may be present resulting from long-term historical land-use. Equipment may have been stored over the site.

Hydrocarbon staining was identified in the open drain across the south eastern section of the site (AEC1) and in the car park area to the west of the site (AEC2). The source for AEC1 appears to be from overflow of the oil-water separator located in the adjacent property to the south west.

Oil staining in AEC2 is minor and expected to impact the shallow soil surface.

A fence comprising cement sheeting was identified in the south eastern section of the site (AEC3).

General storage of foreign materials and equipment may have resulted in application of contaminants.

7.2 Contaminants of concern

Based on the historical land-use, the contaminants of concern over the general site and fill application are:

- Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury)
- Total recoverable hydrocarbons (TRH)
- Benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN)
- Polycyclic aromatic hydrocarbons (PAH)
- Organochlorine pesticides (OCP)
- Organophosphorous pesticides (OPP)
- Asbestos

Contaminants of concern over potential areas of environmental concern are:

- Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury)
- Total recoverable hydrocarbons (TRH)
- Benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN)
- Polycyclic aromatic hydrocarbons (PAH)
- Asbestos

7.3 Potential receptors

The proposed land-use of the site is residential.

Human receptors include:

- Residents (adults and children)
- Visitors
- Construction workers
- Intrusive maintenance workers

Ecological receptors include

- Flora and fauna on the site and adjacent to the site
- Aquatic flora and fauna receptors off-site

7.4 Exposure pathways

Pathways for exposure to contaminants are:

- Dermal contact following soil disturbance
- Ingestion and inhalation after soil disturbance
- Surface water and sediment runoff into waterways
- Leaching of contaminants into the groundwater
- Direct contact of flora and fauna with the soil

7.5 Source receptor linkages

Potential source pathway receptor linkages are identified to enable evaluation of any adverse impact on human health or ecology.

The proposed land-use of the site is residential and human receptors to the investigation area are likely. Proposed users of the site may have a risk of exposure if contaminants are present and the soil is disturbed. Residents, visitors, construction workers and intrusive maintenance workers may potentially be receptors to soil contaminants through direct contact to soil which includes ingestion and dermal contact.

The contaminants of concern include volatiles and asbestos fibres. Inhalation of soil material, asbestos fibres and vapour is considered a pathway for exposure and may occur as a result of soil disturbance and dust production. Major soil disturbance before and after the development of the site is considered unlikely. Soil disturbance during construction and development of the site is expected to be accompanied by erosion control measures which will reduce the incidence of dust.

Vegetation on the site may be potential receptors to soil contamination through direct uptake of contaminants.

The source receptor linkage to aquatic organisms and ecosystems is considered incomplete as the site is partially vegetated, hardstand gravel or sealed by concrete and movement of sediments from the site is unlikely. During construction work it is expected that erosion control measures will be implemented and movement of sediment off site will be unlikely. Following development of the site it is expected that vegetation will be established or hard surfaces constructed which will control sediment movement from the site. The nearest waterway to the site is the Queen Charlottes Creek and it is not expected that contaminants from the site will be transported to aquatic receptors within the creek. Queen Charlottes Creek is considered to be a highly disturbed ecosystem.

Groundwater is not identified as a potential receptor to contamination as contamination potentially occurs within 1.0m from the site surface, groundwater level is expected to be greater than 4m and the clay subsoils layer restrict downward movement of potential contaminants. Contaminants are expected to be located within the fill or to be applied from the surface.

Source/contaminants	Transport	Potential exposure pathways	Receptors
☒ Historical land-use and fill application Heavy metals TRH PAH BTEXN OCP/OPP Asbestos	☒ Wind ☒ Sedimentation ☐ Groundwater ☐ Surface water ☒ Volatilisation	☒ Direct contact (ingestion and absorption) (human and environment) ☒ Inhalation ☐ Runoff ☒ Leaching	☒ Residents ☒ Visitors (adults and children) ☒ Intrusive maintenance workers ☒ Terrestrial flora and fauna ☐ Aquatic flora and fauna
☒ Hydrocarbon spill Heavy metals TRH PAH BTEXN	☐ Wind ☒ Sedimentation ☐ Groundwater ☐ Surface water ☒ Volatilisation	☒ Direct contact (ingestion and absorption) (human and environment) ☒ Inhalation ☐ Runoff ☒ Leaching	☒ Residents ☒ Visitors (adults and children) ☒ Intrusive maintenance workers ☒ Terrestrial flora and fauna ☐ Aquatic flora and fauna
☒ Foreign materials Heavy metals TRH PAH BTEXN Asbestos	☒ Wind ☐ Sedimentation ☐ Groundwater ☐ Surface water ☒ Volatilisation	☒ Direct contact (ingestion and absorption) (human and environment) ☒ Inhalation ☐ Runoff ☒ Leaching	☒ Residents ☒ Visitors (adults and children) ☒ Intrusive maintenance workers ☒ Terrestrial flora and fauna ☐ Aquatic flora and fauna

☒ Potential, ☐ unknown/unlikely

8. Data quality objectives (DQO)

8.1 State the problem

A residential subdivision is proposed for the site. Historical land-use activities may have impacted the contamination status of the site.

Potential exists for contaminating activities to have been undertaken on site which may impact on the suitability for the proposed land-use. Fill may have been placed on the site as part of site development works. Source of fill is not known.

Potential contaminants may be present from long-term historical land-use.

Hydrocarbon staining was identified in an open drain (AEC1) and in the car park area (AEC2). The discolouration over AEC1 is expected to be from spill of an oil-water separator located in the adjacent property to the south west. The discolouration area over AEC2 is minor and expected to impact the shallow soil surface.

A fence comprising cement sheeting was identified in the south eastern section of the site (AEC3).

General storage of foreign materials and equipment may have resulted in application of contaminants.

The site requires investigation to ensure suitability for the proposed land-use.

8.2 Identify the decision

The land-use proposed is residential and the levels of contaminants should be less than the thresholds listed in Section 11. The decision problem is, do the levels of potential contaminants exceed the assessment criteria and thresholds listed in Section 11.

8.3 Identify the inputs decision

Investigations of the site is required to identify any potential contaminants from the historical land-use. The inputs include:

- Field observation of aesthetic impacts of visible contamination
- Soil samples across the site
- Inspection of the condition of the site

8.4 Define the boundaries of the study

The investigation area is 18 to 26 Lambert Street, Bathurst NSW.

8.5 Develop a decision rule

Data collected for the purpose of the contamination investigation must be sufficiently accurate in representativeness. The accuracy will be assessed by determination of:

- Current and historical land-use to describe potential contamination sources
- Site setting, potential receptors and pathways
- Soil samples to characterise the extent of contamination and analysis in accredited laboratories

The adopted criteria is suitability for residential land-use including the health and ecological investigation levels listed in Schedule B1 of the NEPM (1999) *Guideline on Investigation Levels for Soil and Groundwater*. The data must be sufficiently representative to identify the extent of contamination.

The decision rule for the investigation is:

- If the contamination levels were less than the adopted levels, are potential risks low and acceptable

- If the levels were equal or greater than the investigations level, will exceedances affect the suitability for the proposed land-use

8.6 Specify acceptable limits on the decision errors

A decision error in the context of the decision rule would lead to either underestimation or overestimation of the risk level associated with the property. Decision errors include:

- Limitations in available site history information
- Constraints associated with the ability to access certain areas of a site
- Errors in the sampling plan
- Data quality including comparability, representativeness and accuracy for data collection and analysis
- Analytic data validation

Where sample analysis is undertaken the quality of the data collected was assessed on a range of factors including:

- Documentation and data completeness
- Reference to relevant guidance documents
- Consistency of methodology
- Data quality including comparability, representativeness and accuracy for data collection and analysis
- Analytical data validation
- Satisfactory acceptance limits are the 95% upper confidence limit of samples collected is less than the threshold levels, the standard deviation of results should be less than 50% of the relevant investigation or screening level and the levels are less than 250% the relevant thresholds.

8.7 Optimize the design for obtaining data

The methodology described in Sections 9 and 10 presents a framework for the contamination investigation which has been designed to meet the scope objectives and the nominated DQO.

Optimisation of the data collection process was informed by a review of historical information and observations made at the time of site inspection. The sampling was used to inform the potential contamination status of the site. The scope of work was undertaken to a level of accuracy and confidence in the ASC NEPM (NEPC 1999).

Analytes included arsenic, cadmium, total chromium, copper, lead, nickel, zinc, mercury, TRH (C6-C40), BTEXN, PAH, OCP, OPP and asbestos.

9. Sampling analysis plan and sampling methodology

9.1 Sampling strategy

9.1.1 Sampling design

Visual inspections were undertaken over the site for indicators of contamination.

A systematic sampling pattern was adopted to assess the probable location of contamination on the site.

A judgemental sampling pattern was adopted to assess potential areas of environmental concern.

9.1.2 Sampling locations

Boreholes were drilled in accessible areas of the site on an approximate 15m grid pattern to enable the soil profile to be described including the presence of fill and natural soil. Two soil samples were collected

from representative depths from each borehole. Additional samples were collected where additional layers of fill were identified.

One additional soil sample was collected from a potential area of environmental concern. The sampling location of the area of environmental concern was selected based on the most likely location of contaminants.

The area beneath the existing shed was not assessed due to business operation constraints.

The sampling locations are described in Figure 3.

9.1.3 Sampling density

The site sampling density can detect a potential hot spot across the site with a radius of 8.4m at a 95% level of confidence.

The sampling frequency of the site is in accordance with the minimum recommended by EPA (2022).

Sampling density of areas of environmental concern is expected to be sufficient to enable preliminary assessment.

9.1.4 Sampling depth

Boreholes were drilled on the site up to 1.5m to enable assessment of the presence of fill.

Soil samples were collected in the fill from the 200 to 300mm beneath the concrete slab and from 100 to 300mm over unsealed areas. Additional samples were collected from representative depths in the soil profile. Potential contaminants are expected to originate from the site surface or fill.

The sample from the area of environmental concern was collected from the 0 to 100mm soil layer to enable assessment of volatile hydrocarbons. Potential contaminants are expected to originate from the soil surface and minimal disturbance has occurred.

9.2 Analytes

Soil samples collected from the site were evaluated for arsenic, cadmium, chromium, copper, lead, nickel, zinc, mercury, TRH (C6-C40), BTEXN, PAH, OCP, OPP and asbestos in soil. Heavy metals, hydrocarbons, pesticides and asbestos were identified as the contaminants of concern possibly present as a result of importation of fill and historical land-use.

The sample collected from the area of environmental concern was analysed for arsenic, cadmium, chromium, copper, lead, nickel, zinc, mercury, TRH (C6-C40), BTEXN and PAH.

9.3 Sampling methods

Boreholes were drilled with an EVH truck mounted drill rig with solid auger and soil samples collected directly from the auger tip at the required depth with a stainless steel hand spade. Discrete soil samples were transferred directly to a solvent rinsed glass jar with a Teflon lid.

Tools were decontaminated between sampling locations to prevent cross contamination by brushing to remove caked or encrusted material, rinsing with clean tap water and allowing to air dry or using a clean towel.

Table 1. Schedule of samples and analyses

Sample ID	Location (Figure 3)	Depth (mm)	Description	Analysis undertaken
BH1(200)	General site	100-200	Natural	Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni), zinc (Zn), mercury (Hg), total recoverable hydrocarbons (TRH (C6-C40)), benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAH) organochlorine pesticides (OCP), organophosphorous pesticides (OPP), asbestos in soil
BH1(500)	General site	400-500	Fill	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH2(200)	General site	100-200	Natural	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH2(600)	General site	500-600	Fill	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH3(200)	General site	100-200	Natural	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH3(600)	General site	500-600	Fill	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH4(200)	General site	100-200	Natural	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH4(600)	General site	500-600	Fill	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH5(200)	General site	100-200	Natural	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH5(600)	General site	500-600	Fill	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH6(200)	General site	100-200	Natural	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH6(500)	General site	500-600	Fill	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH7(300)	General site	200-300	Natural	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH7(600)	General site	500-600	Fill	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH8(300)	General site	200-300	Natural	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH8(600)	General site	500-600	Fill	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH9(400)	General site	300-400	Natural	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH9(600)	General site	500-600	Fill	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH10(300)	General site	200-300	Natural	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH10(500)	General site	400-500	Fill	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH11(300)	General site	200-300	Natural	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH11(500)	General site	400-500	Fill	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH12(200)	General site	100-200	Natural	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
BH12(500)	General site	400-500	Fill	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil
HS1	AEC1 - Drain discharge	0-100	-	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH

10. Quality assurance and quality control

10.1 Sampling design

The sampling program is intended to provide data as to the presence and levels of contaminants.

Boreholes were drilled across the site on a systematic pattern of approximately 15 metres. This sampling density will enable the detection of an area with an elevated concentration on a radius of 8.4 metres across the site with a 95% confidence level.

The number of sampling locations is in accordance with the recommended density in the EPA sampling guidelines.

Sampling density of areas of environmental concern is expected to be sufficient to enable preliminary characterisation.

10.2 Field

The collection of samples was undertaken in accordance with accepted standard protocols (NEPC 1999). Discrete soil samples were collected and analysed. Soil samples collected from the site were analysed for heavy metals, TRH, BTEXN, PAH, OCP, OPP and asbestos in soil.

Sampling equipment was decontaminated between each sampling event. The appropriate storage conditions and duration were observed between sampling and analysis. A chain of custody form accompanied the samples to the laboratory (Appendix 4).

A single sampler was used to collect the samples using standard methods. Soil collected was a fresh sample from the auger tip. After collection the samples were immediately placed in new glass sampling jars and placed in a cooler. Sample jars were filled to minimise headspace and maintain sample integrity.

Two duplicate samples were collected. No field blank, rinsate, trip blank or matrix spikes were submitted for analysis. Some samples from all batches did not contain contaminants which confirm the absence of cross contamination during transport and storage.

A field sampling log is presented in Appendix 2.

10.3 Laboratory

Chemical analysis was conducted by SGS Laboratories, Alexandria, which is NATA accredited for the tests undertaken. The laboratory has quality assurance and quality control programs in place, which include internal replication and analysis of spike samples and recoveries.

Method blanks, matrix duplicates and laboratory control samples were within acceptance criteria. The quality assurance and quality control report is presented together with the laboratory report as Appendix 4.

10.4 Data evaluation

The laboratory quality control report indicates the data variability is within acceptable industry limits. The data is considered representative and usable for the purposes of the investigation. Data quality indicators are presented in Appendix 1.

11. Assessment criteria

The main reference for environmental site assessment in Australia is the ASC NEPM (NEPC 1999 rev 2013). This document includes criteria for use in evaluating potential risk to human health and ecosystems from chemical impacts, which are presented as generic investigation levels and screening

levels appropriate to a Tier 1 risk-based assessment applicable for site assessment. The application of these investigation levels and screening levels is subject to a range of limitations, and their selection and use must be in the context of a conceptual site model (CSM) relating to the nature and distribution of impacts and potential exposure pathways.

The proposed land-use is residential and appropriate initial criteria are described in *Guideline on Investigation Levels for Soil and Groundwater* (NEPC 1999).

The criteria lists health investigation levels (HIL) for a range of land-uses. The appropriate initial comparison for the site is residential (HIL A).

The NEPC (1999) also provides health screening levels (HSL) for hydrocarbons in soil. The HSLs have been developed to be protective of human health for soil types, depths below surface and apply to exposure to hydrocarbons through the predominant vapour exposure pathway. The appropriate HSL for the site is listed in Table 3. TRH>16 have physical properties which make the TRH fractions non-volatiles and therefore these TRH fractions are not applicable for vapour intrusion.

Ecological investigation levels (EIL) have been developed for the protection of terrestrial ecosystems for selected metals and organic substances in the soil in the guideline (NEPC 1999). Ecological screening levels (ESL) assess the risk to terrestrial ecosystems from petroleum hydrocarbons in the soil. The EILs and ESLs consider the properties of the soil and contaminants and the capacity of the local ecosystem to accommodate increases in contaminant levels.

Typical CEC value for the site is >10 to 15cmol(+)/kg, clay content of >10 to 15%, pH values of between 5.0 and 5.5 and organic carbon of 1.5 to 2% (eSPADE, 2023). The proposed land-use is residential. The contaminants have been identified in the soil for at least two years and are considered aged.

EILs vary with land-use and apply to contaminants up to 2m depth below the surface. The ASC NEPM EIL calculation spreadsheet was used to determine the EIL. The EILs for residential/ land-use are listed in Table 2.

ESLs are dependent on land-use, soil types and are applicable to contaminants up to 2m below the surface. The appropriate ESL for the site is residential in fine soil as listed in Table 3.

Management limits have been developed to assess petroleum hydrocarbons following evaluation of human health and ecological risks (NEPC 1999). Management limits are applicable as screening levels after consideration of relevant ESLs and HSLs. The appropriate management limit for the site is listed in Table 3.

CRC CARE (2017) has developed a high reliability guideline value for benzo(a)pyrene based on updated data. The values are applicable for fresh benzo(a)pyrene as is the case in the NEPM (1999) guidelines but has been derived from a larger database, with additional species and tests results, resulting in a higher reliability guideline value. CRC CARE (2017) indicates that benzo(a)pyrene bioavailability decreases with time. The CRC CARE (2017) derived ecological guideline for benzo(a)pyrene has been adopted in the assessment (Table 3). The NEPM (1999) value has been included for comparison.

Chromium is analysed as total chromium which is the sum of chromium (III) and chromium (VI). Chromium (VI) is a potential contaminant from industrial processes including ferrochrome production, electroplating, pigment production and tanning (WHO 1998). Chromium (VI) is reduced to chromium (III) when it comes into contact with organic matter in biota, soil and water. Chromium in the environment is present in the trivalent state (WHO 1998).

Asbestos screening levels for residential land-use is no visible asbestos on the surface. The threshold for bonded asbestos is 0.01% w/w and for friable asbestos 0.001% w/w of soil.

Table 2. EIL Calculation sheet, residential/ land-use

Analyte	Rationale	EIL (mg/kg)
Arsenic	Generic	100
Chromium (III)	Clay content 15%	470
Copper	CEC 15cmol/kg, pH 5.5, organic carbon 2%	160
Lead	Generic	1,100
Nickel	CEC 15cmol/kg	220
Zinc	CEC 15cmol/kg, pH 5.5	390
Naphthalene	Generic	170
DDT	Generic	180

EIL – Ecological investigation level

Table 3. Assessment criteria (mg/kg)

Analyte	HIL A	Residential HSL - clay soil 0m to <1m	Residential EIL	Residential ESL fine soil	Management limits Residential	Derived ecological guideline Residential (CRC CARE 2017)
Arsenic	100	-	100	-	-	-
Cadmium	20	-	-	-	-	-
Chromium	100 ¹	-	470 ²	-	-	-
Copper	6,000	-	160	-	-	-
Lead	300	-	1,100	-	-	-
Nickel	400	-	220	-	-	-
Zinc	7,400	-	390	-	-	-
Mercury	40	-	-	-	-	-
F1 (TRH C6-10)	-	50	-	180	800	-
F2 (TRH C10-16)	-	280	-	120	1,000	-
F3 (TRH C16-34)	-	NA	-	1,300	3,500	-
F4 (TRH C34-40)	-	NA	-	5,600	10,000	-
Benzene	-	0.7	-	65	-	-
Toluene	-	480	-	105	-	-
Ethylbenzene	-	NL	-	125	-	-
Xylenes	-	110	-	45	-	-
Naphthalene	-	5	170	-	-	-
Benzo(a)pyrene	-	-	-	0.7	-	33
Carcinogenic PAH	3	-	-	-	-	-
PAH (Total)	300	-	-	-	-	-
OCP-DD's	240	-	180	-	-	-
OPP	-	-	-	-	-	-

HIL – health investigation levels, HSL – health screening level, EIL – ecological investigation levels, ESL – ecological screening level, NL – non limiting, NA – not applicable, ¹ Threshold for chromium (VI), ² Threshold for chromium (III)

12. Results and discussion

12.1 General site

The site has a historical residential land-use from the decade of 1930's to 1980's and commercial land-use comprising hardware stores. The site has been operating as a water shop since 2004. Surface cover over the majority of the site is concrete. The western section comprises an elevated unsealed area used as car park and for general storage of foreign materials. The area is mixed gravel hardstand and vegetation. Vegetation over the unsealed area is approximately 50% due to the movement of vehicles and presence of hardstand gravel in the carpark area.

Two areas of hydrocarbon discolouration were identified on-site. AEC1 was identified over concrete in the open drain located along the eastern boundary. It is expected to occur due to spills from the oil-water

separator located in the adjacent mechanical shop. One soil sample was collected from the discharging area of the drain, considered an area of environmental concern.

AEC2 is located in the carpark and expected to occur due to leaking from cars parked in the area. The area presented an area of discolouration of approximately 1m² and is expected to impact the shallow soil surface.

Several foreign materials were identified in the car park area to the west. The foreign materials are considered an amenity hazard. A structure footprint was identified in the western section of the site. The structure was reportedly a former washing bay.

One fence containing asbestos cement sheeting was identified in the south eastern section of the site (Appendix 7). The fence was in moderate condition. No fragments were identified in the ground. The ACM is non-friable and the fence area is less than 10m². Asbestos was not detected in the soil samples analysed for the general site (Table 7).

Low levels of heavy metals near environmental background levels and less than the adopted thresholds for human health and environment were detected in most of the soil samples collected from the general site. Level of heavy metals in samples from BH1 and BH7 were above background levels and less than the adopted thresholds (Table 4).

Levels of OCP and OPP were less than the limit of reporting and adopted thresholds for human health and environment in all samples collected from the general site (Table 5).

Levels of benzo(a)pyrene exceeded the ESL thresholds (0.7mg/kg) for samples from BH1(300) (0.9mg/kg), BH7(200) (0.8mg/kg) and BH7(400) (1.0mg/kg). The levels were less than the CRC Care derived ecological guideline of 33mg/kg (Table 6).

Vegetation is identified as the ecological receptor in the site conceptual model. BH1 was located adjacent AEC1 and covered in concrete. Vegetation in BH7 location, in the carpark area did not appear to be impacted by the levels of benzo(a)pyrene (Figure 5).

The source of benzo(a)pyrene in the BH1 location is expected to be from spills of hydrocarbons from the oil water separator. The source for BH7 is expected to be from the storage of foreign materials. Additionally, the fill material may locally contain levels of heavy metals and benzo(a)pyrene above background levels in these borehole locations.

BH8 was drilled over the washing bay location and did not present elevated levels of contaminants.

Levels of all other hydrocarbons were generally low or less than the detection limits and adopted thresholds for the remaining samples from the general site (Table 6).

Table 4. Analytical results and threshold concentrations - heavy metals (mg/kg)

Sample ID	Location (Figure 3)	Depth (mm)	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc	Mercury
BH1(300)	BH1	300	6	<0.3	19	29	120	6.7	110	0.36
BH1(800)	BH1	800	3	<0.3	17	15	11	11	20	<0.05
BH2(300)	BH2	300	2	<0.3	5.7	22	3	4.7	8.5	<0.05
BH2(500)	BH2	500	4	<0.3	18	24	59	8.0	180	0.10
BH3(300)	BH3	300	3	<0.3	8.6	2.2	3	5.6	32	<0.05
BH3(600)	BH3	600	4	<0.3	22	15	9	11	23	<0.05
BH4(300)	BH4	300	1	<0.3	9.8	4.1	2	6.5	30	<0.05
BH4(500)	BH4	500	3	<0.3	21	13	10	12	30	<0.05
BH5(200)	BH5	200	3	<0.3	15	8.0	29	9.2	100	<0.05
BH5(400)	BH5	400	4	<0.3	22	16	17	13	52	<0.05
BH6(200)	BH6	200	2	<0.3	13	5.8	10	8.5	71	<0.05
BH6(500)	BH6	500	4	<0.3	24	18	21	11	53	<0.05
BH7(200)	BH7	200	3	<0.3	15	9.6	22	13	86	<0.05
BH7(400)	BH7	400	10	<0.3	18	20	90	6.6	130	0.22
BH8(200)	BH8	200	3	<0.3	17	7.0	9	11	68	<0.05
BH8(600)	BH8	600	4	<0.3	25	21	14	12	35	<0.05
BH9(400)	BH9	400	2	<0.3	13	8.6	9	8.8	31	<0.05
BH9(600)	BH9	600	2	<0.3	9.7	7.7	8	7.7	18	<0.05
BH10(300)	BH10	300	3	<0.3	14	12	7	8.8	37	<0.05
BH10(500)	BH10	500	3	<0.3	12	10	8	9.5	17	<0.05
BH11(300)	BH11	300	2	<0.3	10	5.6	3	6.6	34	<0.05
BH11(500)	BH11	500	2	<0.3	13	9.1	8	7.8	18	<0.05
BH12(300)	BH12	300	2	<0.3	16	4.1	5	11	49	<0.05
BH12(500)	BH12	500	2	<0.3	15	9.5	8	9.1	18	<0.05
BH13(300)	BH13	300	3	<0.3	6.4	12	6	2.8	23	<0.05
BH13(600)	BH13	600	3	<0.3	12	5.9	12	7.2	51	<0.05
BH13(800)	BH13	800	3	<0.3	20	14	9	9.9	27	<0.05
Health Investigation Levels – Residential land-use threshold (NEPC 1999)										
			100	20	100 ¹	6,000	300	400	7,400	40
Ecological Investigation Levels – Urban residential and public open space (NEPC 1999)										
			100	-	470 ²	160	1,100	220	390	-

¹ Threshold for Chromium (VI), ² Threshold for Chromium (III)

Table 5. Analytical results and threshold concentrations – Organochlorine and organophosphorous pesticides (mg/kg)

Sample ID	OCP	DDs	OPP
BH1(300)	<1	<0.6	<1.7
BH1(800)	<1	<0.6	<1.7
BH2(300)	<1	<0.6	<1.7
BH2(500)	<1	<0.6	<1.7
BH3(300)	<1	<0.6	<1.7
BH3(600)	<1	<0.6	<1.7
BH4(300)	<1	<0.6	<1.7
BH4(500)	<1	<0.6	<1.7
BH5(200)	<1	<0.6	<1.7
BH5(400)	<1	<0.6	<1.7
BH6(200)	<1	<0.6	<1.7
BH6(500)	<1	<0.6	<1.7
BH7(200)	<1	<0.6	<1.7
BH7(400)	<1	<0.6	<1.7
BH8(200)	<1	<0.6	<1.7
BH8(600)	<1	<0.6	<1.7
BH9(400)	<1	<0.6	<1.7
BH9(600)	<1	<0.6	<1.7
BH10(300)	<1	<0.6	<1.7
BH10(500)	<1	<0.6	<1.7
BH11(300)	<1	<0.6	<1.7
BH11(500)	<1	<0.6	<1.7
BH12(300)	<1	<0.6	<1.7
BH12(500)	<1	<0.6	<1.7
BH13(300)	<1	<0.6	<1.7
BH13(600)	<1	<0.6	<1.7
BH13(800)	<1	<0.6	<1.7
Health Investigation Levels- Residential land-use threshold (NEPC 1999)			
	-	240	-
Ecological Investigation Levels- Urban residential and public open space land-use threshold (NEPC 1999)			
	-	180	-

Table 6. Analytical results and threshold concentrations – hydrocarbons (mg/kg)

Sample I.D	Description (Figure 3)	Depth (mm)	TRH (C6-C10)	TRH (C10-C16)	TRH (C16-C34)	TRH (C34-C40)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	Benzo(a)pyrene	Carcinogenic PAH	Total PAH
BH1(300)	BH1	300	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	0.9	1.2	7.0
BH1(800)	BH1	800	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH2(300)	BH2	300	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH2(500)	BH2	500	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	0.3	0.4	2.4
BH3(300)	BH3	300	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH3(600)	BH3	600	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH4(300)	BH4	300	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH4(500)	BH4	500	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH5(200)	BH5	200	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH5(400)	BH5	400	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH6(200)	BH6	200	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH6(500)	BH6	500	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH7(200)	BH7	200	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	0.8	1.0	5.2
BH7(400)	BH7	400	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	1.0	1.3	6.4
BH8(200)	BH8	200	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH8(600)	BH8	600	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH9(400)	BH9	400	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH9(600)	BH9	600	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH10(300)	BH10	300	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH10(500)	BH10	500	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH11(300)	BH11	300	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH11(500)	BH11	500	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH12(300)	BH12	300	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH12(500)	BH12	500	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH13(300)	BH13	300	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH13(600)	BH13	600	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
BH13(800)	BH13	800	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8
HSL A – Residential (clay soil)														
0 to <1m			50	280	NA	NA	0.7	480	NL	110	5	-	-	-
HIL A – Residential			-	-	-	-	-	-	-	-	-	-	3	300
EIL – Residential			-	-	-	-	-	-	-	-	170	-	-	-
ESL – Residential/fine soil			180	120	1,300	5,600	65	105	125	45	-	0.7	-	-
Management limits – Residential/fine soil			800	1,000	3,500	10,000	-	-	-	-	-	-	-	-
CRC CARE – derived ecological guideline			-	-	-	-	-	-	-	-	-	33	-	-
NL – Not limiting, HIL – health investigation levels, HSL – health screening level, EIL – ecological investigation level, ESL – ecological screening level														

Table 7. Analytical results and threshold concentrations – Asbestos (%w/w)

Sample ID	Asbestos in soil
BH1(300)	<0.01
BH1(800)	<0.01
BH2(300)	<0.01
BH2(500)	<0.01
BH3(300)	<0.01
BH3(600)	<0.01
BH4(300)	<0.01
BH4(500)	<0.01
BH5(200)	<0.01
BH5(400)	<0.01
BH6(200)	<0.01
BH6(500)	<0.01
BH7(200)	<0.01
BH7(400)	<0.01
BH8(200)	<0.01
BH8(600)	<0.01
BH9(400)	<0.01
BH9(600)	<0.01
BH10(300)	<0.01
BH10(500)	<0.01
BH11(300)	<0.01
BH11(500)	<0.01
BH12(300)	<0.01
BH12(500)	<0.01
BH13(300)	<0.01
BH13(600)	<0.01
BH13(800)	<0.01
NEPM (1999) – Residential land-use	
	0.01

12.2 Area of environmental concern

One sample was collected over a maintained lawn from the discharging area of AEC1. The sample was located offsite next to a stormwater surface drain. The results are considered indicative of the potential contamination migration pattern, but susceptible to inputs of contaminants from external sources.

The sample exceeded the EIL (390mg/kg) for zinc (1,900mg/kg). The levels of the other heavy metals were less than the adopted thresholds (Table 8).

Table 8. Analytical results and threshold concentrations - heavy metals (mg/kg)

Sample ID	Location (Figure 3)	Depth (mm)	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc	Mercury
HS1	HS1 – drain discharge	100	5	1.2	30	83	110	27	1,900	<0.05
Health Investigation Levels – Residential land-use threshold (NEPC 1999)										
		100		20	100 ¹	6,000	300	400	7,400	40
Ecological Investigation Levels – Urban residential and public open space (NEPC 1999)										
		100		-	470 ²	160	1,100	220	390	-

¹ Threshold for Chromium (VI), ² Threshold for Chromium (III)

Levels of TRH(C16-C34) (3,700mg/kg) exceeded the ESL and management limits thresholds. Levels of benzo(a)pyrene (3.4mg/kg) exceeded the ESL thresholds and levels of carcinogenic PAH (4.9mg/kg)

exceeded the human health investigation level (3mg/kg). The levels of the remaining hydrocarbons were less than the adopted thresholds (Table 9).

Table 9. Analytical results and threshold concentrations – hydrocarbons (mg/kg)

Sample I.D	Description (Figure 3)	Depth (mm)	TRH (C6-C10)	TRH (C10-C16)	TRH (C16-C34)	TRH (C34-C40)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	Benzo(a)pyrene	Carcinogenic PAH	Total PAH
HS1	HS1	150	<25	60	3,700	650	<0.1	<0.1	<0.1	<0.3	<0.1	3.4	4.9	43
HSL A – Residential (clay soil)														
	0 to <1m		50	280	NA	NA	0.7	480	NL	110	5	-	-	-
HIL A – Residential														
			-	-	-	-	-	-	-	-	-		3	300
EIL – Residential														
			-	-	-	-	-	-	-	-	170	-	-	-
ESL – Residential/fine soil														
			180	120	1,300	5,600	65	105	125	45	-	0.7	-	-
Management limits – Residential/fine soil														
			800	1,000	3,500	10,000	-	-	-	-	-	-	-	-
CRC CARE – derived ecological guideline														
			-	-	-	-	-	-	-	-	-	33	-	-

NL – Not limiting, HIL – health investigation levels, HSL – health screening level, EIL – ecological investigation level, ESL – ecological screening level

13. Site characterisation

13.1 Environmental contamination

Levels of benzo(a)pyrene exceeding the ESL were identified in BH1 and BH7. The levels were less than the adopted CRC Care thresholds. The ecological receptor identified on-site is vegetation. Vegetation adjacent BH7 location did not present signs of stress due to the levels of benzo(a)pyrene. BH1 was covered in a concrete slab.

Zinc impacted soils exceeding the adopted EIL and benzo(a)pyrene and TRH (C16-C34) exceeding the ESL were identified in sample location HS1. Sample HS1 was collected offsite from a maintained lawn and did not present signs of vegetation stress. Levels of TRH (C16-C34) also exceeded the management limits for sample HS1.

Levels of carcinogenic PAH exceeding the adopted HIL were identified for sample location HS1. The sample was located offsite and adjacent an open stormwater drain. The area may be subject to external inputs of contaminants. The results are considered indicative of contamination migration.

Additional sampling may be required under existing structures and adjacent AEC1 for additional characterisation as levels of PAH's were identified in the area and in the discharging area.

Asbestos containing material was identified in the small fence located in the south eastern section of the site. The asbestos containing material is classified as bonded (non-friable), in moderate condition and presents a low risk in current condition. The fence is approximately 3m x 2m, total area is less than 10m².

AEC2 was visually inspected and comprised an area of approximately 1m² with expected depth of 0.3m.

Evidence of oil leaking from machinery stored offsite was identified, the leaking may be impacting the site.

13.2 Chemical degradation production

Asbestos and metals do not degrade. Hydrocarbons degrade very slowly in soil.

13.3 Exposed population

13.3.1 Human health

No contamination exceeding the human health thresholds was identified on-site. The sample HS1 was located offsite and impacted by carcinogenic PAH exceeding human health thresholds. Additional assessment under and adjacent AEC1 and under the main shed should be undertaken to confirm potential levels of contaminants.

13.3.1 Ecological

Existing vegetation did not present signs of impact by the levels of benzo(a)pyrene. Vegetation planted on the site during residential land-use is unlikely to be impacted by the contaminants in the soil.

Groundwater is expected to be intercepted from depths of 3.9m. The clayey layer is expected to restrict downward movement and prevent contaminants from reaching the groundwater table. The contaminants have been identified as being present at less than 1m depth. Impacts on groundwater are not expected.

14. Conclusions and recommendations

14.1 Summary

An inspection of the site was made on 24 April 2024. The site is currently operating as water shop selling pool equipment, pumps and industrial supplies.

Surface cover over the site comprises concrete hardstand in the driveways adjacent the main building. The western section of the site was an elevated open area comprising part hardstand gravel and part vegetation. Vegetation comprised grasses and broadleaved weeds. The western section was used as car park and for general storage of foreign materials.

Potential areas of environmental concern identified from the site inspection were:

- Hydrocarbon discolouration present in the concreted open drain along the eastern boundary of the site. The discolouration is potentially due to overflow of the oil-water separator located at the adjacent mechanical shop to the south west (AEC1).
- Minor hydrocarbon discolouration identified in the car park area to the west of the site. The discolouration area is minor expected to impact the shallow soil surface (AEC2).
- Potential asbestos containing material from a small fence located in the south eastern section of the site (AEC3). No cement sheeting fragments were identified on the site surface.

Thirteen boreholes were drilled on a 15m systematic grid pattern in accessible areas of the site. The boreholes were drilled to enable soil profile descriptions and soil sampling. Twenty-seven soil samples were collected from the site to allow assessment of fill and natural soils. A minimum of two samples were collected from each borehole at representative depths. The samples were evaluated for heavy metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAH), organochlorine pesticides (OCP), organophosphorous pesticides (OPP) and asbestos in soil.

One sample was collected from the discharge area of the open drain. The sample was collected from 0-100mm depth and analysed for heavy metals, TRH, BTEXN and PAH.

Soils on-site comprised fill of brown, dark brown, black and grey clayey sand to depths up to 0.7m and natural soil comprising dark brown to brown silty clay to 1.5m. Soils from the fill layer from location BH1 presented slight odour of hydrocarbon and discolouration.

Levels of benzo(a)pyrene exceeded the ESL thresholds for a number of samples from the general site. The levels of all other contaminants of concern were less than the adopted thresholds across the general site.

The sample from the eastern discharge potential area of environmental concern exceeded the EIL thresholds for zinc, the ESL thresholds for TRH (C16-C34) and benzo(a)pyrene and the HIL thresholds for carcinogenic PAH. It is not known if hydrocarbon impacts are occurring beneath the concrete drain.

The sample was collected outside the investigation area and may be indicative of the contamination status of the drain discharge, however, it may receive contamination inputs from sources offsite. It is not known if hydrocarbon impacts are occurring beneath the concrete drain.

The potential ecological receptor identified on-site is vegetation. The vegetation did not appear to be impacted by the exceedances in the sampling areas. Other areas of the site were covered by concrete.

14.2 Assumptions in reaching the conclusions

It is assumed the sampling sites are representative of the site.

14.3 Extent of uncertainties

The analytical data relate only to the locations sampled. Soil conditions can vary both laterally and vertically and it cannot be excluded that unidentified contaminants may be present. The sampling density was designed to detect a 'hot spot' within a radius of approximately 8.4 metres and with a 95% level of confidence.

Locations beneath the existing shed were not assessed.

14.4 Suitability for proposed use of the site

The site is suitable for ongoing commercial land-use. The site can be made suitable for residential land-use following additional investigations and remediation.

14.5 Limitations and constraints on the use of the site

No constraints are recommended.

14.6 Recommendation for further work

Additional investigations should be undertaken:

- In currently inaccessible areas at the time concrete is removed. The additional investigation should include visual inspection. Samples should be collected if evidence of contamination is suspected.
- Across area AEC1 including under the existing drain. Additional sampling should be undertaken adjacent sampling location HS1 in order to delineate and characterise the identified contamination.

Remediation should be undertaken over areas AEC2 and AEC3. The remediation works should be undertaken in accordance with a Remedial action plan (RAP).

Additional remediation may be required in AEC1 following characterisation of existing contamination.

Foreign materials stored in the car park should be removed as they are considered an amenity issue.

An unexpected finds procedure should be adopted for site development works.

15. Report limitations and intellectual property

This report has been prepared for the use of the client to achieve the objectives given the clients requirements. The level of confidence of the conclusion reached is governed by the scope of the investigation and the availability and quality of existing data. Where limitations or uncertainties are known, they are identified in the report. No liability can be accepted for failure to identify conditions or issues which arise in the future and which could not reasonably have been predicted using the scope of the investigation and the information obtained.

The investigation identifies the actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing is interpreted by geologists, engineers or scientists who then render an opinion about overall subsurface conditions, the nature and extent of the contamination, its likely impact on the proposed development and appropriate remediation measures. Actual conditions may differ from those inferred to exist, because no professional, no matter how well qualified, and no sub-surface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock or time. The actual interface between materials may be far more gradual or abrupt than a report indicates. Actual conditions in areas not sampled may differ from predictions. It is thus important to understand the limitations of the investigation and recognise that we are not responsible for these limitations.

This report, including data contained and its findings and conclusions, remains the intellectual property of Barnson Pty Ltd. A licence to use the report for the specific purpose identified is granted for the persons identified in that section after full payment for the services involved in preparation of the report. This report should not be used by persons or for purposes other than those stated and should not be reproduced without the permission of Barnson Pty Ltd.

16. References

CRC CARE (2017) *Risk-based management and remediation guidance for benzo(a)pyrene* (CRC CARE Technical Report no 39, CRC for Contamination Assessment and Remediation of the Environment, Newcastle Australia)

Environment Protection Authority (2020) *Consultants Reporting on Contaminated Land* (NSW Environment Protection Authority, Chatswood)

EPA (2017) *Contaminated Sites: Guidelines for the NSW Site Auditors Scheme* (NSW Department of Environment and Conservation, Chatswood)

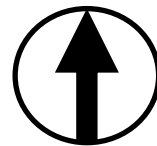
NEPC (1999 revised 2013) *National Environment Protection (Assessment of Site Contamination) Measure 1999* (National Environment Protection Council Service Corporation, Adelaide)

NSW Government (nd) eSpadev2 (<https://www.environment.nsw.gov.au/eSpade2WebApp>)

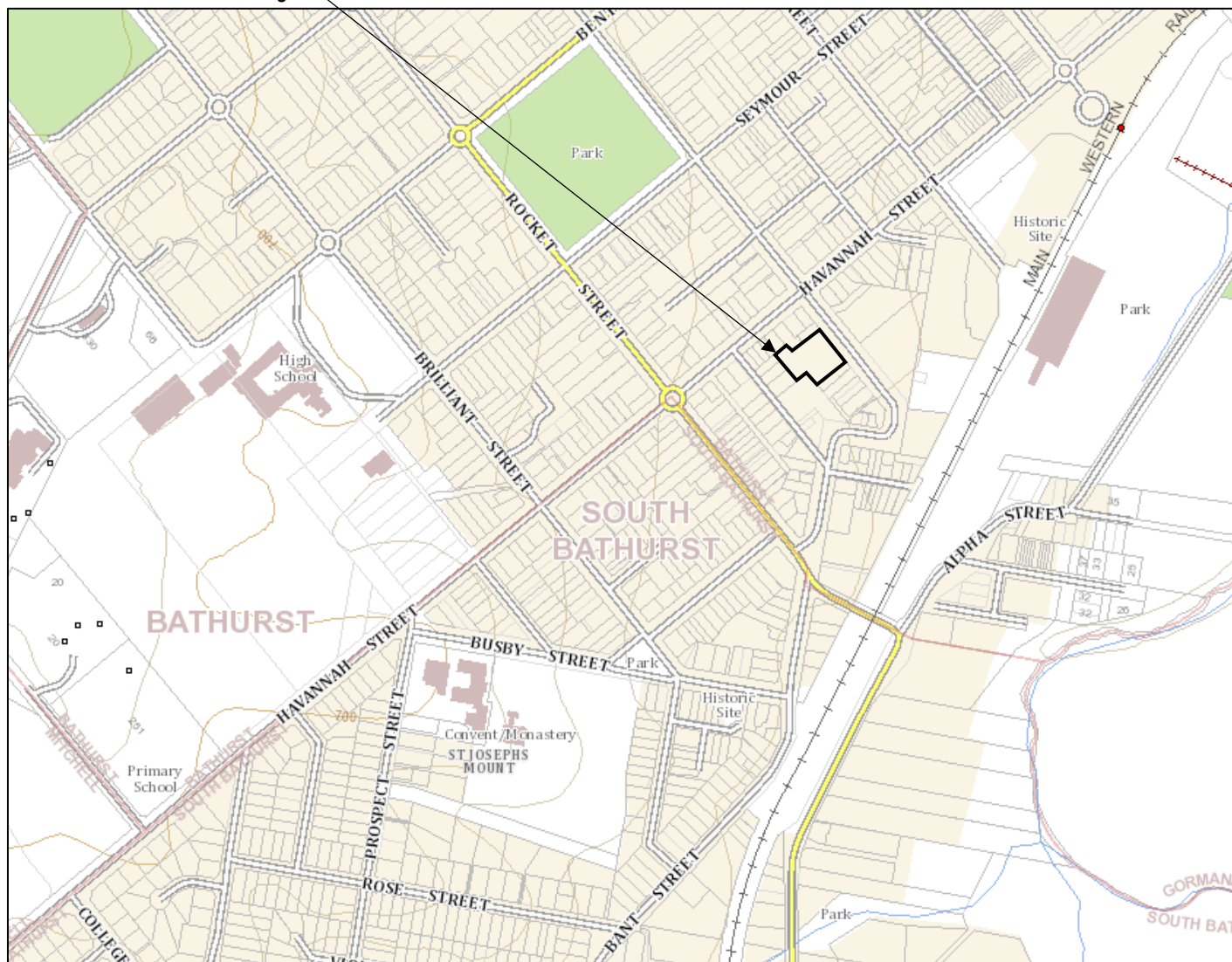
State Government of NSW and Department of Regional New South Wales (2015) *Naturally occurring asbestos*, viewed 12 May 2022 (datasets.seed.nsw.gov.au/dataset/naturally-occurring-asbestos)

State Government of NSW and Department of Planning, Industry and Environment (1998) *Acid sulphate soils risk*, viewed 12 May 2022 ([datasets.seed.nsw.gov.au/dataset/ acid-sulfate-soils-risk0196c](https://datasets.seed.nsw.gov.au/dataset/acid-sulfate-soils-risk0196c))

Figures



Investigation area



Legend

— Investigation area

Figure 1. Locality map

18 to 26 Lambert Street, Bathurst NSW

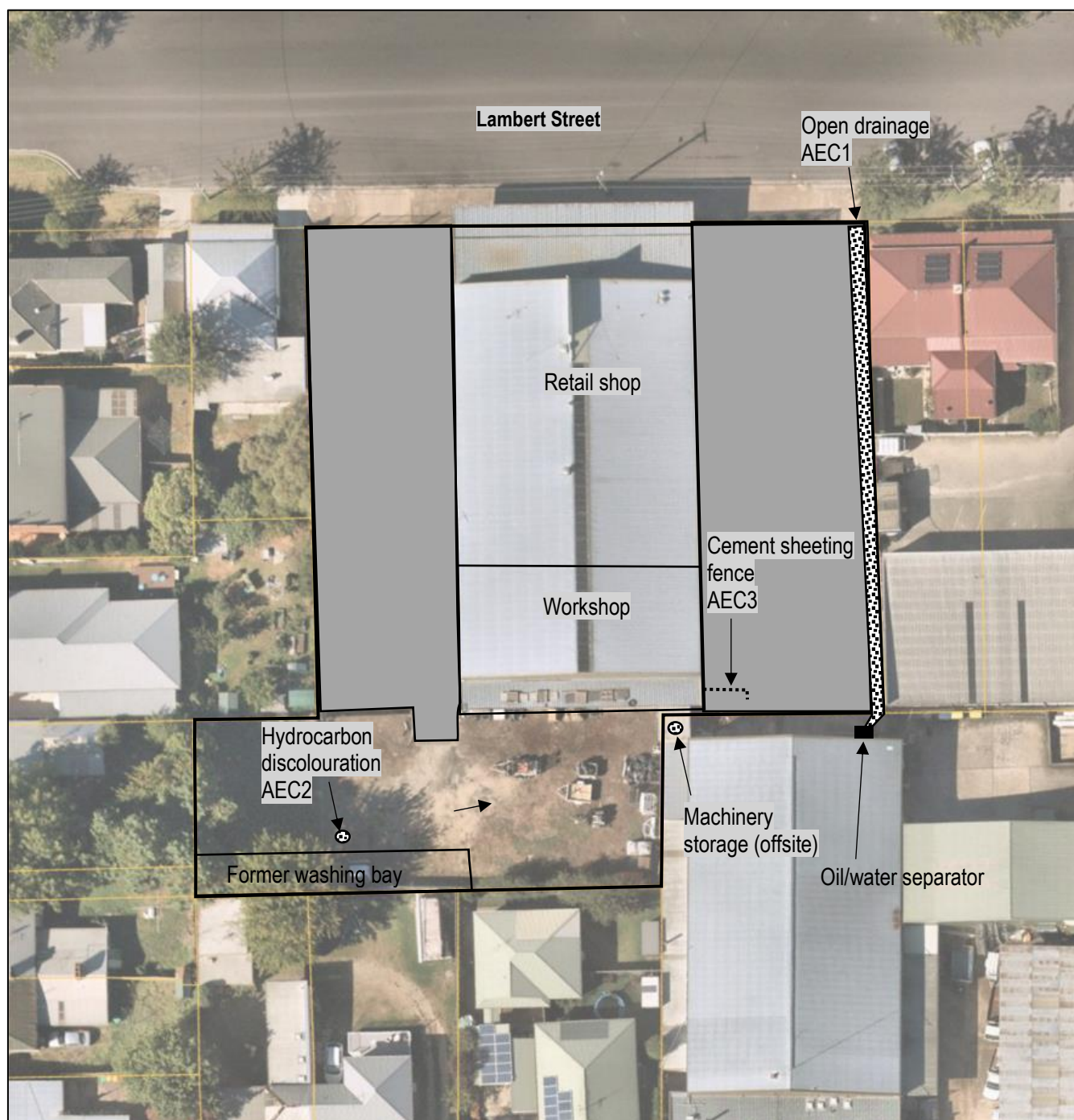
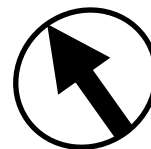


Bamson Pty Ltd

Job: R44202c

Drawn by: FC

Date: 15/05/2023



Legend

- | | | | |
|--|--------------------|--|---------------------|
| | Investigation area | | Oil/water separator |
| | Slope | | Concrete slab |
| | Discolouration | | |

Approximate Scale 1: 900



Figure 2. Aerial image (2024) and site layout

18 to 26 Lambert Street, Bathurst NSW

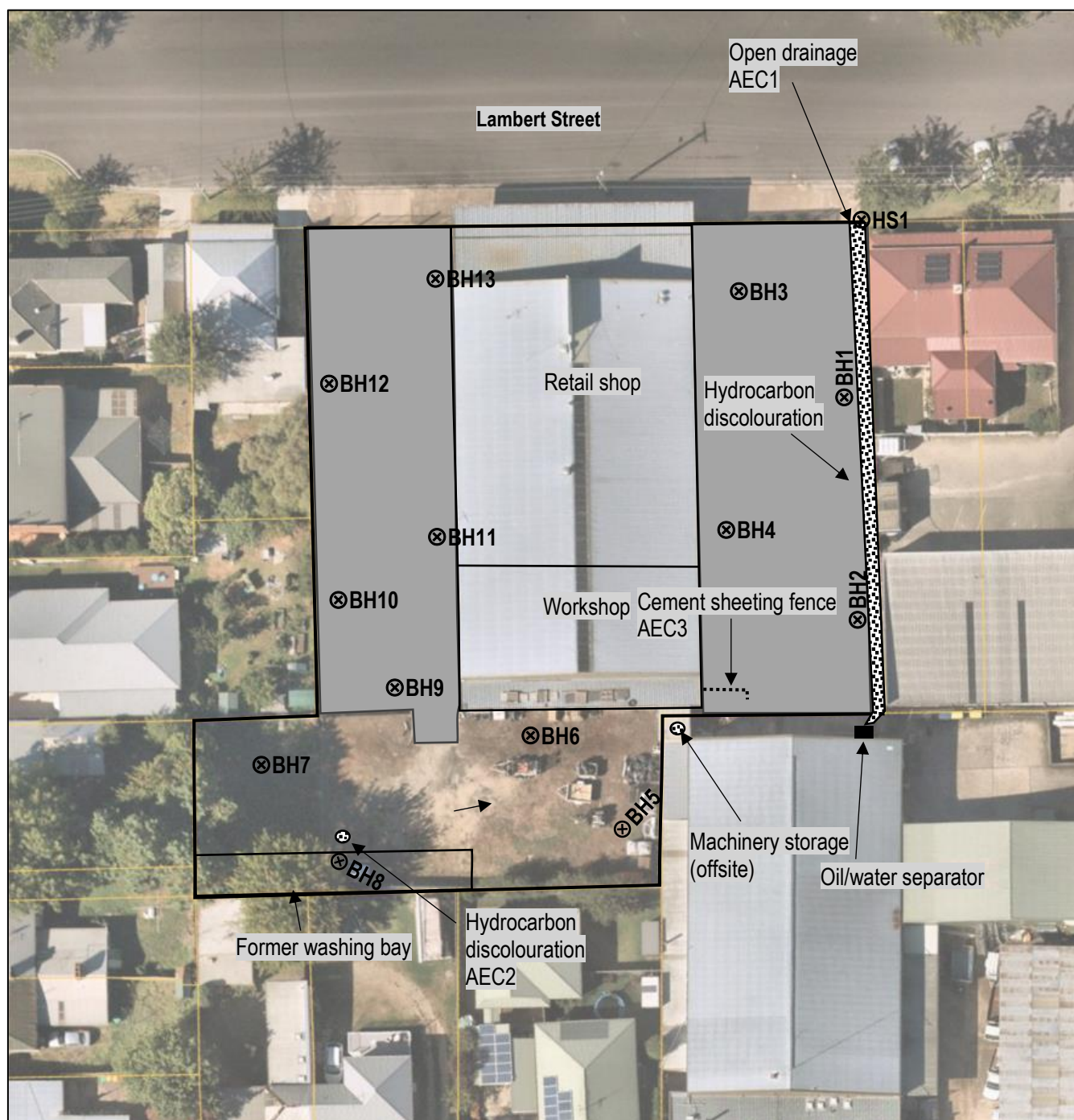
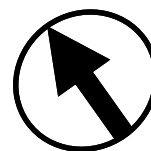


Bamson Pty Ltd

Job: R44202c

Drawn by: FC

Date: 15/05/2024



Legend

- | | | | |
|--|--------------------|--|---------------------|
| | Investigation area | | Oil/water separator |
| | Slope | | Concrete slab |
| | Discolouration | | |

Approximate Scale 1: 900



Figure 3. Sampling locations

18 to 26 Lambert Street, Bathurst NSW

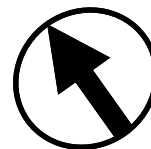


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Job: R44202c

Drawn by: FC

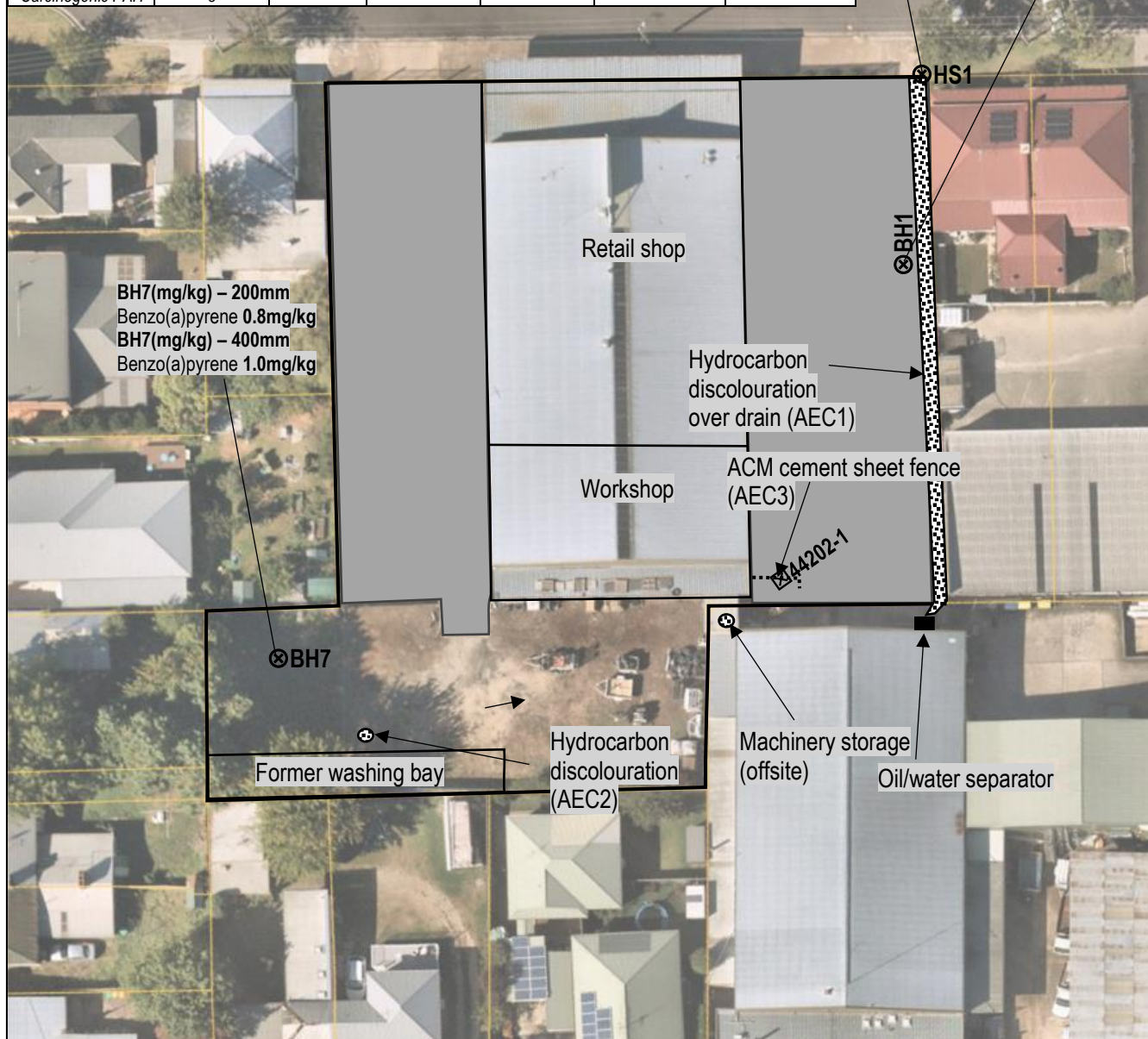
Date: 15/05/2024



HS1 (mg/kg) – 150mm
Zinc: 1,900mg/kg
TRH F3: 3,700mg/kg
Benzo(a)pyrene: 3.4mg/kg
Carcinogenic PAH: 4.9mg/kg

BH1 (mg/kg) – 300mm
Benzo(a)pyrene 0.9mg/kg

	HIL A – residential clay soil	HSL (0 to 1m)	EIL Residential (0 to 2m)	ESL (0 to 2m)	Management limits	CRC CARE ecological guideline
Zinc	7,400	-	390	-	-	-
TRH F3 (C16-C34)	-	NA	-	1,300	3,500	-
Benzo(a)pyrene	-	-	-	0.7	-	33
Carcinogenic PAH	3	-	-	-	-	-



Legend

- Investigation area
- Slope
- Discolouration
- ACM sampling location
- Oil/water separator
- Concrete slab

Approximate Scale 1: 900



Figure 4. Exceedances

18 to 26 Lambert Street, Bathurst NSW



Bamson Pty Ltd

Job: R44202c

Drawn by: FC

Date: 15/05/2024

Figure 5. Photographs of the site



Looking north over eastern section of the site



Looking south over the eastern section of the site



Looking north over western section of the site



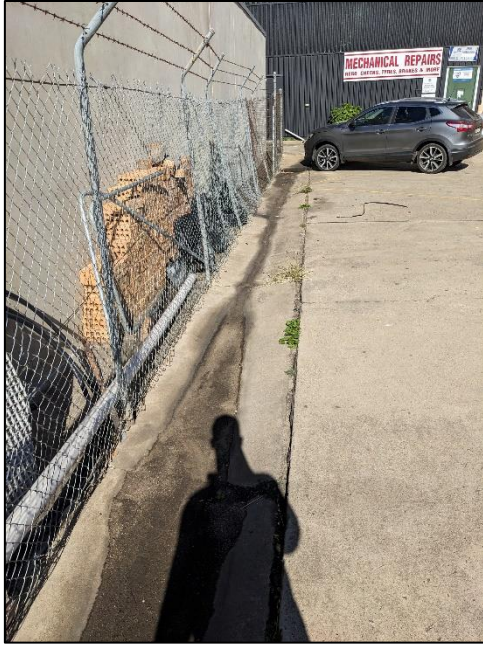
Southern section of the site



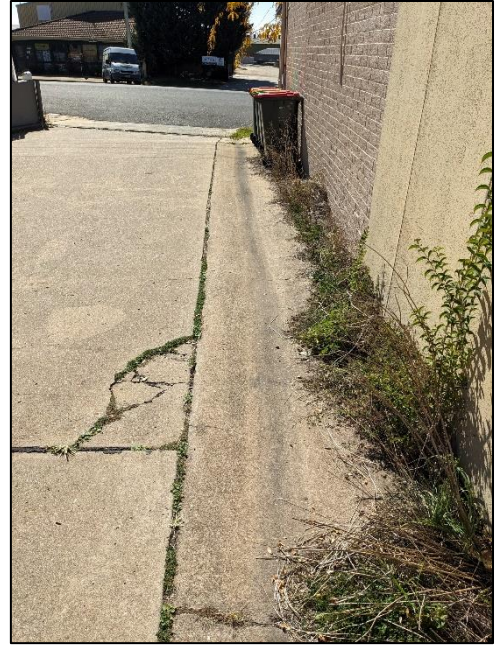
Asbestos containing fence – AEC3



Oil-water separator presenting discolouration – AEC1



Open drain presenting discolouration – looking south west – AEC1



Open drain presenting discolouration – looking north east - AEC1



BH7 location



Hydrocarbon discolouration – AEC2



Machinery storage (offsite)



Evidence of leaking (offsite)

Appendices

Appendix 1. Sample analysis, quality assurance and quality control (QAQC) report

1. Data quality indicators (DQI) requirements

1.1 Completeness

A measure of the amount of usable data for a data collection activity. Greater than 95% of the data must be reliable based on the quality objectives. Where greater than two quality objectives have less reliability than the acceptance criterion the data may be considered with uncertainty.

1.1.1 Field

Consideration	Requirement
Locations and depths to be sampled	Described in the sampling plan. The acceptance criterion is 95% data retrieved compared with proposed. Acceptance criterion is 100% in crucial areas.
SOP appropriate and compiled	Described in the sampling plan.
Experienced sampler	Sampler or supervisor
Documentation correct	Sampling log and chain of custody completed

1.1.2 Laboratory

Consideration	Requirement
Samples analysed	Number according to sampling and quality plan
Analytes	Number according to sampling and quality plan
Methods	EPA or other recognised methods with suitable PQL
Sample documentation	Complete including chain of custody and sample description
Sample holding times	Metals 6 months, OCP 14 days

1.2 Comparability

The confidence that data may be considered to be equivalent for each sampling and analytical event. The data must show little or no inconsistencies with results and field observations.

1.2.1 Field

Consideration	Requirement
SOP	Same sampling procedures to be used
Experienced sampler	Sampler or supervisor
Climatic conditions	Described as may influence results
Samples collected	Sample medium, size, preparation, storage, transport

1.2.2 Laboratory

Consideration	Requirement
Analytical methods	Same methods, approved methods
PQL	Same
Same laboratory	Justify if different
Same units	Justify if different

1.3 Representativeness

The confidence (expressed qualitatively) that data are representative of each media present on the site.

1.3.1 Field

Consideration	Requirement
Appropriate media sampled	Sampled according to sampling and quality plan or in accordance with the EPA (1995) sampling guidelines.
All media identified	Sampling media identified in the sampling and quality plan. Where surface water bodies on the site sampled.

1.3.2 Laboratory

Consideration	Requirement
Samples analysed	Blanks

1.4 Precision

A quantitative measure of the variability (or reproduced of the data). Is measured by standard deviation or relative percent difference (RPD). An RPD analysis is calculated and compared to the adopted criteria of 30%.

Data not conforming to the acceptance criterion will be examined for determination of suitability for the purpose of site characterisation.

1.4.1 Field

Consideration	Requirement
Field duplicates	Frequency of 5%, results to be within RPD or discussion required indicate the appropriateness of SOP

1.4.2 Laboratory

Consideration	Requirement
Laboratory and inter lab duplicates	Frequency of 5%, results to be within RPD or discussion required
Field duplicates	Frequency of 5%, results to be within RPD or discussion required
Laboratory prepared volatile trip spikes	One per sampling batch, results to be within RPD or discussion required

1.5 Accuracy

A quantitative measure of the closeness of the reported data to the true value.

1.5.1 Field

Consideration	Requirement
SOP	Complied
Inter laboratory duplicates	Frequency of 5%. Analysis criterion – 30%

1.5.2 Laboratory

Recovery data (surrogates, laboratory control samples and matrix spikes) data subject to the following control limits:

- 60-140% acceptable data
- 20-60% discussion required, may be considered acceptable
- 10-20% data should considered as estimates
- 10% data should be rejected

Consideration	Requirement
Field blanks	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Rinsate blanks	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Method blanks	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Matrix spikes	Frequency of 5%, results to be within +/-40% or discussion required
Matrix duplicates	Sample injected with a known concentration of contaminants with tested. Frequency of 5%, results to be within +/-40% or discussion required
Surrogate spikes	QC monitoring spikes to be added to samples at the extraction process in the laboratory where applicable. Surrogates are closely related to the organic target analyte and not normally found in the natural environment. Frequency of 5%, results to be within +/-40% or discussion required
Laboratory control samples	Externally prepared reference material containing representative analytes under investigation. These will be undertaken at one per batch. It is to be within +/-40% or discussion required
Laboratory prepared spikes	Frequency of 5%, results to be within +/-40% or discussion required

2. Laboratory analysis summary

One analysis batch was undertaken over the preliminary investigation program. Samples were collected on 24 April 2024. A total of 27 samples were submitted for analytical testing. The samples were collected in the field by an environmental scientist from Barnson Pty Ltd, placed into laboratory prepared receptacles as recommended in NEPM (1999). The samples preservation and storage was undertaken using standard industry practices (NEPC 1999). Chain of custody forms accompanied transport of the samples to the laboratory.

The samples were analysed at the laboratories of SGS, Alexandria, NSW which are National Association of Testing Authorities (NATA) accredited for the tests undertaken. The analyses undertaken, number of samples tested and methods are presented in the following tables:

Laboratory analysis schedule

Sample id.	Number of samples	Duplicate	Analyses	Date collected	Substrate	Laboratory report
BH1(300), BH1(800), BH2(300), BH2(500), BH3(300), BH3(600), BH4(300), BH4(500), BH5(200), BH5(400), BH6(200), BH6(500), BH7(200), BH7(400), BH8(200), BH8(600), BH9(400), BH9(600), BH10(300), BH10(500), BH11(300), BH11(500), BH12(300), BH12(500), BH13(300), BH13(800)	26	2	Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni), zinc (Zn), mercury (Hg), total recoverable hydrocarbons (TRH (C6-C40)), benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAH), organochlorine pesticides (OCP), organophosphorous pesticides (OPP)	24/04/2024	Soil	SE264336
HS1	1	-	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH	24/04/2024	Soil	SE264336

Analytical methods

Analyte	Extraction	Laboratory methods
Metals	USEPA 200.2 Mod	APHA USEPA SW846-6010
Chromium (III)	-	APHA 3500 CR-A&B & 3120 and USEPA SW846-3060A
Chromium (VI)	USEPA SW846-3060A	USEPA SW846-3060A
Mercury	USEPA 200.2 Mod	APHA 3112
TPH(C6-C9)	USPEA SW846-5030A	USPEA SW 846-8260B
TPH(C10-C36), PAH	Tumbler extraction of solids	USEPA SW 846-8270B
PCB	Tumbler extraction of solids	USEPA SW 846-8270B
OC Pesticides	Tumbler extraction of solids	USEPA SW 846-8270B
BTEX	Tumbler extraction of solids	USEPA SW 846-8260B

3. Field quality assurance and quality control

Two intra laboratory duplicate samples were collected for the investigation. The frequency was 8% which is greater than with the recommended frequency of 5%. Table A1 outlines the samples collected and differences in replicate analyses. Relative differences were deemed to pass if they were within the acceptance limits of +/- 30% for replicate analyses or less than 5 times the detection limit.

Field duplicate frequency

Sample id.	Number of samples	Duplicate	Frequency (%)	Date collected	Substrate	Laboratory report
BH1(300), BH1(800), BH2(300), BH2(500), BH3(300), BH3(600), BH4(300), BH4(500), BH5(200), BH5(400), BH6(200), BH6(500), BH7(200), BH7(400), BH8(200), BH8(600), BH9(400), BH9(600), BH10(300), BH10(500), BH11(300), BH11(500), BH12(300), BH12(500), BH13(300), BH13(800), HS1	27	2	7	24/04/2024	Soil	SE264336

Table A1. Relative differences for intra laboratory duplicates

	BH1(200)	DA1	Relative difference (%)	Pass/Fail	BH1(500)	DA2	Relative difference (%)	Pass/Fail
Arsenic	6	3	67	Pass*	3	2	40	Pass*
Cadmium	<0.3	<0.3	NA	Pass	<0.3	<0.3	NA	Pass
Chromium	19	15	24	Pass	12	12	0	Pass
Copper	29	31	7	Pass	10	11	10	Pass
Lead	120	120	0	Pass	8	7	13	Pass
Nickel	6.7	6.5	3	Pass	9.5	11	15	Pass
Zinc	110	140	24	Pass	17	18	6	Pass
Mercury	0.36	0.31	15	Pass	<0.05	<0.05	NA	Pass

NA – relative difference unable to be calculated as results are less than laboratory detection limit, * Result less than 5 times the detection limit

No trip blanks or spikes were submitted for analysis. This is not considered to create significant uncertainty in the analysis results because of the following rationale:

- The fieldwork was completed within a short time period and consistent methods were used for soil sampling.

- Soil samples were placed in insulated cooled containers after sampling to ensure preservation during transport and storage.
- The samples were placed in single use jars using clean sampling tools and disposable gloves from material not in contact with other samples. This reduces the likelihood of cross contamination.
- Samples in the analysis batch contain analytes below the level of detection. It is considered unlikely that contamination has occurred as a result of transport and handling.

4. Laboratory quality assurance and quality control

Sample holding times are recommended in NEPC (1999). The time between collection and extraction for all samples was less than the criteria listed below:

Analyte	Maximum holding time
Metals, cyanide	6 months
OCP, TRH, BTEXN, PAH	14 days

The laboratory interpretative reports are presented with individual laboratory report. Assessment is made of holding time, frequency of control samples and quality control samples. No significant outliers exist for the sampling batches. The laboratory report also contains a detailed description of preparation methods and analytical methods.

The results, quality report, interpretative report and chain of custody are presented in the attached appendices. The quality report contains the laboratory duplicates, spikes, laboratory control samples, blanks and where appropriate matrix spike recovery (surrogate).

5. Data quality indicators (DQI) analysis

5.1 Completeness

A measure of the amount of usable data for a data collection activity (total to be greater than 95%).

The data set was found to be complete based on the scope of work. No critical areas of contamination were omitted from the data set.

5.1.1 Field

Consideration	Accepted	Comment
Locations to be sampled	Yes	In accordance with sampling methodology, described in the report. Sampling locations described in figures.
Depth to be sampled	Yes	In accordance with sampling methodology
SOP appropriate and compiled	Yes	In accordance with sampling methodology Sampled with a stainless-steel hand spade collected directly for the auger tip and placed into lab prepared containers, decontamination between samples, latex gloves worn by sampler
Experienced sampler	Yes	Same soil sampler, environmental scientist
Documentation correct	Yes	Sampling log completed Chain of custody completed

5.1.2 Laboratory

Consideration	Accepted	Comment
Samples analysed	Yes	All critical samples analysed in accordance with chain of custody and analysis plan
Analytes	Yes	All analytes in accordance with chain of custody and analysis plan
Methods	Yes	Analysed in NATA accredited laboratory with recognised methods and suitable PQL
Sample documentation	Yes	Completed including chain of custody and sample results and quality results report for each batch
Sample holding times	Yes	Metals less than 6 months. OCP, PAH, BTEXN, TRH 14 days.

5.2 Comparability

The confidence that data may be considered to be equivalent for each sampling and analytical event.

The data sets were found to be acceptable.

5.2.1 Field

Consideration	Accepted	Comment
SOP	Yes	Same sampling procedures used and sampled on one date
Experienced sampler	Yes	Experienced scientist
Climatic conditions	Yes	Described in field sampling log
Samples collected	Yes	Suitable size, storage and transport

5.2.2 Laboratory

Consideration	Accepted	Comment
Analytical methods	Yes	Same methods all samples, in accordance with NEPC (1999) or USEPA
PQL	Yes	Suitable for analytes
Same laboratory	Yes	SGS is NATA accredited for the tests undertaken
Same units	Yes	-

5.3 Representativeness

The confidence (expressed qualitatively) that data are representative of each media present on the site.

The data sets were found to be acceptable.

5.3.1 Field

Consideration	Accepted	Comment
Appropriate media sampled	Yes	Sampled according to sampling and quality plan
All media identified	Yes	Soil Sampling media identified in the sampling and quality plan

5.3.2 Laboratory

Consideration	Accepted	Comment
Samples analysed	Yes	Undertaken in NATA accredited laboratory. No blanks analysed. Samples in the analysis batch contain analytes below the level of detection. It is considered unlikely that contamination has occurred as a result of transport and handling.

5.4 Precision

A quantitative measure of the variability (or reproduced of the data).

The data sets were found to be acceptable.

5.4.1 Field

Consideration	Accepted	Comment
SOP	Yes	Complied
Field duplicates	Yes	Collected

5.4.2 Laboratory

Consideration	Accepted	Comment
Laboratory and inter lab duplicates	Yes	Frequency of 5%, results to be within +/-30% or discussion required.
Field duplicates	Yes	Frequency of 5%, results to be within +/-30% or discussion required.
Laboratory prepared volatile trip spikes	NA	Not collected due to the preliminary nature of the investigation.

5.5 Accuracy

A quantitative measure of the closeness of the reported data to the true value.
The data sets were found to be acceptable.

5.5.1 Field

Consideration	Accepted	Comment
SOP	Yes	Complied
Field blanks	NA	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Rinsate blanks	NA	Frequency of 5%, <5 times the PQL, PQL may be adjusted

5.5.2 Laboratory

Consideration	Accepted	Comment
Method blanks	Yes	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Matrix spikes	No	Frequency of 5%, results to be within +/-40% or discussion required. Recovery failed acceptance criteria due to matrix interference
Matrix duplicates	Yes	Frequency of 5%, results to be within +/-40% or discussion required.
Surrogate spikes	No	Frequency of 5%, results to be within +/-40% or discussion required. At least 2 of 3 surrogates are within acceptance criteria.
Laboratory control samples	Yes	Frequency of 5%, results to be within +/-40% or discussion required
Laboratory prepared spikes	Yes	Frequency of 5%, results to be within +/-40% or discussion required

No trip blanks, field spikes or sample rinsates were submitted for analysis. This is not considered to create significant uncertainty in the analysis results because of the following rationale:

- The fieldwork methods used for soil sampling were consistent throughout the project with all in situ samples collected from material which had not been subject to exposure.
- The fieldwork was completed within a short time period and consistent methods were used for soil sampling.
- Soil samples were placed in insulated cooled containers as quickly as possible, with the containers filled to minimize headspace. The sample containers were sealed immediately after the sample was collected and chilled in an esky containing ice.
- The samples were stored in a refrigerator and transported with ice bricks to ensure preservation during transport and storage.
- The samples were placed in single use jars using clean sampling tools and disposable gloves from material not in contact with other samples. This reduces the likelihood of cross contamination.
- Samples in the analysis batches contained analytes below the level of detection. It is considered unlikely that contamination has occurred as a result of transport and handling.

6. Conclusion

All media appropriate to the objectives of this investigation have been adequately analysed and no area of significant uncertainty exist. It is concluded the data is usable for the purposes of the investigation.

Appendix 2. Field sampling log

Sampling log

Client B.A.R. Constructions Pty Ltd
 Contact Brad Roughley
 Job number 44202
 Location 18 to 26 Lambert Street, Bathurst NSW
 Date 24 April 2024
 Investigator Felipe Canavez
 Weather conditions Fine and warm

Sample ID	Matrix	Date	Analysis required	Observations/comments
BH1(300)	Soil	24/4/2024	Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni), zinc (Zn), mercury (Hg), total recoverable hydrocarbons (TRH (C6-C40)), benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAH), organochlorine pesticides (OCP), organophosphorous pesticides (OPP), asbestos in soil	General site – fill
BH1(800)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site - natural
BH2(300)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site – fill
BH2(500)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site - natural
BH3(300)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site – fill
BH3(600)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site - natural
BH4(300)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site – fill
BH4(500)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site - natural
BH5(200)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site – fill
BH5(400)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site - natural
BH6(200)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site – fill
BH6(500)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site - natural
BH7(200)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site – fill
BH7(400)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site - natural
BH8(200)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site – fill
BH8(600)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site - natural
BH9(400)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site – fill
BH9(600)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site - natural

BH10(300)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site – fill
BH10(500)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site - natural
BH11(300)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site – fill
BH11(500)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site - natural
BH12(300)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site – fill
BH12(500)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site - natural
BH13(300)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site – fill
BH13(800)	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH, OCP, OPP, asbestos in soil	General site - natural
HS1	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH (C6-C40), BTEXN, PAH	Oen drain discharge
DA	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of BH1(200)
DB	Soil	24/4/2024	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of BH10(500)

Appendix 3. Borelogs

Easting : 739,740.72	Location : 18-26 Lambert Street, Bathurst NSW	Job Number : 44202
Northing : 6,298,303.79	Logged By : FC	Client : B.A.R. Constructions Pty Ltd
Total Depth : 1.5 m	Date : 23/04/2024	Project : Preliminary Contamination Assessment

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Samples	Remark
								Environmental sample	
		0.2	Non-Soil		CCT	Concrete			
			Fill		SC	Fill Clayey SAND (SC) : low plasticity clay, medium dense, dark brown to black, fine to coarse grained, with fine sized gravel, trace low plasticity silt, wet, slight odour of hydrocarbon.	W	BH1-300	
			Natural		CH	Natural Silty CLAY (CH) : firm, high plasticity, brown, trace fine grained sand, inorganic, w ≈ pl.	w ≈ PL		
								BH1-800	
						BH1 Terminated at 1.5m (target depth)			

Easting : 739,740.72	Location : 18-26 Lambert Street, Bathurst NSW	Job Number : 44202
Northing : 6,298,303.79	Logged By : FC	Client : B.A.R. Constructions Pty Ltd
Total Depth : 1.2 m	Date : 23/04/2024	Project : Preliminary Contamination Assessment

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Samples	Remark
								Environmental sample	
 Auger drill with TC bit			Non-Soil		CCT	Concrete			
		0.2	Fill		SC	Fill Clayey SAND (SC) : low plasticity clay, medium dense, dark brown to black, fine to coarse grained, with fine sized gravel, trace low plasticity silt, wet, slight odour of hydrocarbon.	W	BH2-300	
		0.4	Natural		CH	Natural Silty CLAY (CH) : firm, high plasticity, brown, trace fine grained sand, inorganic, w ≈ pl.	w ≈ PL	BH2-500	
		1							
						BH2 Terminated at 1.2m (target depth)			

Easting : 739,740.72
Northing : 6,298,303.79
Total Depth : 1 m

Location : 18-26 Lambert Street, Bathurst NSW
Logged By : FC
Date : 23/04/2024

Job Number : 44202
Client : B.A.R. Constructions Pty Ltd
Project : Preliminary Contamination Assessment

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Samples	Remark
								Environmental sample	
		0.2	Non-Soil		CCT	Concrete			
			Fill		SC	Fill Clayey SAND (SC) : low plasticity clay, medium dense, brown, fine to coarse grained, with fine sized gravel, trace low plasticity silt, wet.	W	BH3-300	
			Natural		CH	Natural Silty CLAY (CH) : firm, high plasticity, dark brown to brown, trace fine grained sand, inorganic, w ≈ pl.	w ≈ PL	BH3-800	
						BH3 Terminated at 1m (target depth)			

Easting : 739,740.72	Location : 18-26 Lambert Street, Bathurst NSW	Job Number : 44202
Northing : 6,298,303.79	Logged By : FC	Client : B.A.R. Constructions Pty Ltd
Total Depth : 1 m	Date : 23/04/2024	Project : Preliminary Contamination Assessment

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Samples	Remark
								Environmental sample	
		0.2	Non-Soil		CCT	Concrete			
			Fill		SC	Fill Clayey SAND (SC) : low plasticity clay, medium dense, brown, fine to coarse grained, with fine sized gravel, trace low plasticity silt, wet.	W	BH4-300	
			Natural		CH	Natural Silty CLAY (CH) : firm, high plasticity, dark brown to brown, trace fine grained sand, inorganic, w ≈ pl.	w ≈ PL	BH4-500	
						BH4 Terminated at 1m (target depth)			

Job Number : 44202
Client : B.A.R. Constructions Pty Ltd
Project : Preliminary Contamination Assessment

Page 1 of 1

Project : Preliminary Contamination Assessment

Page 1 of 1

Easting : 739,740.72	Location : 18-26 Lambert Street, Bathurst NSW	Job Number : 44202
Northing : 6,298,303.79	Logged By : FC	Client : B.A.R. Constructions Pty Ltd
Total Depth : 1 m	Date : 23/04/2024	Project : Preliminary Contamination Assessment

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Samples	Remark
								Environmental sample	
 Auger drill with TC bit		0.3 	Fill		SC	Fill Clayey SAND (SC) : low plasticity clay, medium dense, brown, fine to coarse grained, with fine sized gravel, trace low plasticity silt, wet.	W		
								BH7-200	
			Natural		CH	Natural Silty CLAY (CH) : firm, high plasticity, dark brown to brown, trace fine grained sand, inorganic, w ≈ pl.	w ≈ PL	BH7-400	
						BH7 Terminated at 1m (target depth)			

Easting : 739,740.72	Location : 18-26 Lambert Street, Bathurst NSW	Job Number : 44202
Northing : 6,298,303.79	Logged By : FC	Client : B.A.R. Constructions Pty Ltd
Total Depth : 1 m	Date : 23/04/2024	Project : Preliminary Contamination Assessment

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Samples	Remark
								Environmental sample	
 Auger drill with TC bit		0.5	Fill		SC	Fill Clayey SAND (SC) : low plasticity clay, medium dense, brown, fine to coarse grained, with fine sized gravel, trace low plasticity silt, wet, bricks from 0.3 to 0.5m.	W		
								BH8-200	
			Natural		CH	Natural Silty CLAY (CH) : firm, high plasticity, dark brown to brown, trace fine grained sand, inorganic, w ≈ pl.	w ≈ PL	BH8-600	
						BH8 Terminated at 1m (target depth)			

Project : Preliminary Contamination Assessment

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Samples	Remark
								Environmental sample	
 Auger drill with TC bit			Non-Soil		CCT	Concrete			
		0.2	Fill		SC	Fill Clayey SAND (SC) : low plasticity clay, medium dense, dark brown to black, fine to coarse grained, with fine sized gravel, trace low plasticity silt, wet.	W		
		0.4	Natural		CH	Natural Silty CLAY (CH) : firm, high plasticity, dark brown to brown, trace fine grained sand, inorganic, w ≈ pl.	w ≈ PL	BH9-400	
								BH9-600	
						BH9 Terminated at 1m (target depth)			

Easting : 739,740.72	Location : 18-26 Lambert Street, Bathurst NSW	Job Number : 44202
Northing : 6,298,303.79	Logged By : FC	Client : B.A.R. Constructions Pty Ltd
Total Depth : 1 m	Date : 23/04/2024	Project : Preliminary Contamination Assessment

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Samples	Remark
								Environmental sample	
 Auger drill with TC bit			Non-Soil		CCT	Concrete			
		0.2	Fill		SC	Fill Clayey SAND (SC) : low plasticity clay, medium dense, brown, fine to coarse grained, with fine sized gravel, trace low plasticity silt, wet.	W	BH10-300	
		0.3	Natural		CH	Natural Silty CLAY (CH) : firm, high plasticity, dark brown to brown, trace fine grained sand, inorganic, w ≈ pl.	w ≈ PL	BH10-400	
						BH10 Terminated at 1m (Target depth)			

Easting : 739,740.72	Location : 18-26 Lambert Street, Bathurst NSW	Job Number : 44202
Northing : 6,298,303.79	Logged By : FC	Client : B.A.R. Constructions Pty Ltd
Total Depth : 1 m	Date : 23/04/2024	Project : Preliminary Contamination Assessment

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Samples	Remark
								Environmental sample	
 Auger drill with TC bit			Non-Soil		CCT	Concrete			
		0.2	Fill		SC	Fill Clayey SAND (SC) : low plasticity clay, medium dense, dark brown to black, fine to coarse grained, with fine sized gravel, trace low plasticity silt, wet.	W	BH11-300	
		0.3	Natural		CH	Natural Silty CLAY (CH) : firm, high plasticity, dark brown to brown, trace fine grained sand, inorganic, w ≈ pl.	w ≈ PL		
								BH11-500	
						BH11 Terminated at 1m (Target depth)			

Easting : 739,740.72	Location : 18-26 Lambert Street, Bathurst NSW	Job Number : 44202
Northing : 6,298,303.79	Logged By : FC	Client : B.A.R. Constructions Pty Ltd
Total Depth : 1 m	Date : 23/04/2024	Project : Preliminary Contamination Assessment

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Samples	Remark
								Environmental sample	
 Auger drill with TC bit			Non-Soil		CCT	Concrete			
		0.2	Fill		SC	Fill Clayey SAND (SC) : low plasticity clay, medium dense, dark brown to black, fine to coarse grained, with fine sized gravel, trace low plasticity silt, wet.	W	BH12-300	
		0.3	Natural		CH	Natural Silty CLAY (CH) : firm, high plasticity, dark brown to brown, trace fine grained sand, inorganic, w ≈ pl.	w ≈ PL		
								BH12-500	
						BH12 Terminated at 1m (Target depth)			

Easting : 739,740.72
Northing : 6,298,303.79
Total Depth : 1 m

Location : 18-26 Lambert Street, Bathurst NSW
Logged By : FC
Date : 23/04/2024

Job Number : 44202
Client : B.A.R. Constructions Pty Ltd
Project : Preliminary Contamination Assessment

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Samples	Remark
								Environmental sample	
			Non-Soil		CCT	Concrete			
		0.2	Fill		SC	Fill Clayey SAND (SC) : low plasticity clay, medium dense, dark brown to black, fine to coarse grained, with fine sized gravel, trace low plasticity silt, wet.	W	BH13-300	
		0.4	Fill		SC	As above, but grey.		BH13-600	
		0.7	Natural		CH	Natural Silty CLAY (CH) : firm, high plasticity, dark brown to brown, trace fine grained sand, inorganic, w ≈ pl.	w ≈ PL	BH13-800	
						BH13 Terminated at 1m (Target depth)			

Appendix 4. Soil analysis results – SGS report number SE264336 and chain of custody form

CLIENT DETAILS

Contact Felipe Canavez
Client ENVIROWEST CONSULTING PTY LIMITED
Address PO BOX 8158
NSW 2800

Telephone 61 2 63614954
Facsimile (Not specified)
Email fcanavez@barnson.com.au

Project 44202
Order Number 44202
Samples 30

LABORATORY DETAILS

Manager Huong Crawford
Laboratory SGS Alexandria Environmental
Address Unit 16, 33 Maddox St
Alexandria NSW 2015

Telephone +61 2 8594 0400
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SGS Reference SE264336 R0
Date Received 26/4/2024
Date Reported 3/5/2024

COMMENTS

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

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

Sample #3: A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin

SIGNATORIES



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Chemist



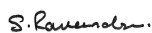
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Organic Chemist

VOC's in Soil [AN433] Tested: 29/4/2024

PARAMETER	UOM	LOR	BH1-300	BH1-800	BH2-300	BH2-500	BH3-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.001	24/4/2024 SE264336.002	24/4/2024 SE264336.003	24/4/2024 SE264336.004	24/4/2024 SE264336.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH3-600	BH4-300	BH4-500	BH5-200	BH5-400
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.006	24/4/2024 SE264336.007	24/4/2024 SE264336.008	24/4/2024 SE264336.009	24/4/2024 SE264336.010
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH6-200	BH6-500	BH7-200	BH7-400	BH8-200
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.011	24/4/2024 SE264336.012	24/4/2024 SE264336.013	24/4/2024 SE264336.014	24/4/2024 SE264336.015
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH8-600	BH9-400	BH9-600	BH10-300	BH10-500
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.016	24/4/2024 SE264336.017	24/4/2024 SE264336.018	24/4/2024 SE264336.019	24/4/2024 SE264336.020
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

VOC's in Soil [AN433] Tested: 29/4/2024 (continued)

PARAMETER	UOM	LOR	BH11-300	BH11-500	BH12-300	BH12-500	BH13-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			- 24/4/2024 SE264336.021	- 24/4/2024 SE264336.022	- 24/4/2024 SE264336.023	- 24/4/2024 SE264336.024	- 24/4/2024 SE264336.025
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH13-600	BH13-800	HS1
			SOIL	SOIL	SOIL
			- 24/4/2024 SE264336.026	- 24/4/2024 SE264336.027	- 24/4/2024 SE264336.030
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 29/4/2024

PARAMETER	UOM	LOR	BH1-300	BH1-800	BH2-300	BH2-500	BH3-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.001	24/4/2024 SE264336.002	24/4/2024 SE264336.003	24/4/2024 SE264336.004	24/4/2024 SE264336.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH3-600	BH4-300	BH4-500	BH5-200	BH5-400
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.006	24/4/2024 SE264336.007	24/4/2024 SE264336.008	24/4/2024 SE264336.009	24/4/2024 SE264336.010
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH6-200	BH6-500	BH7-200	BH7-400	BH8-200
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.011	24/4/2024 SE264336.012	24/4/2024 SE264336.013	24/4/2024 SE264336.014	24/4/2024 SE264336.015
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH8-600	BH9-400	BH9-600	BH10-300	BH10-500
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.016	24/4/2024 SE264336.017	24/4/2024 SE264336.018	24/4/2024 SE264336.019	24/4/2024 SE264336.020
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH11-300	BH11-500	BH12-300	BH12-500	BH13-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.021	24/4/2024 SE264336.022	24/4/2024 SE264336.023	24/4/2024 SE264336.024	24/4/2024 SE264336.025
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH13-600	BH13-800	HS1
			SOIL	SOIL	SOIL
			24/4/2024 SE264336.026	24/4/2024 SE264336.027	24/4/2024 SE264336.030
TRH C6-C9	mg/kg	20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 29/4/2024

PARAMETER	UOM	LOR	BH1-300	BH1-800	BH2-300	BH2-500	BH3-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.001	24/4/2024 SE264336.002	24/4/2024 SE264336.003	24/4/2024 SE264336.004	24/4/2024 SE264336.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	49	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH3-600	BH4-300	BH4-500	BH5-200	BH5-400
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.006	24/4/2024 SE264336.007	24/4/2024 SE264336.008	24/4/2024 SE264336.009	24/4/2024 SE264336.010
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH6-200	BH6-500	BH7-200	BH7-400	BH8-200
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.011	24/4/2024 SE264336.012	24/4/2024 SE264336.013	24/4/2024 SE264336.014	24/4/2024 SE264336.015
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 29/4/2024 (continued)

PARAMETER	UOM	LOR	BH8-600	BH9-400	BH9-600	BH10-300	BH10-500
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.016	24/4/2024 SE264336.017	24/4/2024 SE264336.018	24/4/2024 SE264336.019	24/4/2024 SE264336.020
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH11-300	BH11-500	BH12-300	BH12-500	BH13-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.021	24/4/2024 SE264336.022	24/4/2024 SE264336.023	24/4/2024 SE264336.024	24/4/2024 SE264336.025
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH13-600	BH13-800	HS1
			SOIL	SOIL	SOIL
			24/4/2024 SE264336.026	24/4/2024 SE264336.027	24/4/2024 SE264336.030
TRH C10-C14	mg/kg	20	<20	<20	34
TRH C15-C28	mg/kg	45	<45	<45	2600
TRH C29-C36	mg/kg	45	<45	<45	1500
TRH C37-C40	mg/kg	100	<100	<100	300
TRH >C10-C16	mg/kg	25	<25	<25	60
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	60
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	3700
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	650
TRH C10-C36 Total	mg/kg	110	<110	<110	4200
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	4500

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 29/4/2024

PARAMETER	UOM	LOR	BH1-300	BH1-800	BH2-300	BH2-500	BH3-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.001	24/4/2024 SE264336.002	24/4/2024 SE264336.003	24/4/2024 SE264336.004	24/4/2024 SE264336.005
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	0.5	<0.1	<0.1	0.2	<0.1
Anthracene	mg/kg	0.1	0.2	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	1.0	0.1	<0.1	0.5	<0.1
Pyrene	mg/kg	0.1	1.1	0.1	<0.1	0.5	<0.1
Benzo(a)anthracene	mg/kg	0.1	0.6	<0.1	<0.1	0.2	<0.1
Chrysene	mg/kg	0.1	0.8	<0.1	<0.1	0.3	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	0.8	<0.1	<0.1	0.2	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	0.4	<0.1	<0.1	0.2	<0.1
Benzo(a)pyrene	mg/kg	0.1	0.9	<0.1	<0.1	0.3	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.4	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	0.4	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	1.1	<0.2	<0.2	0.3	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	1.2	<0.3	<0.3	0.4	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	1.2	<0.2	<0.2	0.4	<0.2
Total PAH (18)	mg/kg	0.8	7.0	<0.8	<0.8	2.4	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	7.0	<0.8	<0.8	2.4	<0.8

PARAMETER	UOM	LOR	BH3-600	BH4-300	BH4-500	BH5-200	BH5-400
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.006	24/4/2024 SE264336.007	24/4/2024 SE264336.008	24/4/2024 SE264336.009	24/4/2024 SE264336.010
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 29/4/2024 (continued)

PARAMETER	UOM	LOR	BH6-200	BH6-500	BH7-200	BH7-400	BH8-200
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.011	24/4/2024 SE264336.012	24/4/2024 SE264336.013	24/4/2024 SE264336.014	24/4/2024 SE264336.015
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	0.3	0.4	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	0.1	0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	0.7	0.9	0.2
Pyrene	mg/kg	0.1	<0.1	<0.1	0.8	0.9	0.2
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	0.5	0.6	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	0.6	0.7	0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	0.5	0.7	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	0.4	0.5	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	0.8	1.0	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	0.3	0.4	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	0.3	0.3	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	0.9	1.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	1.0	1.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	1.0	1.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	5.2	6.4	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	5.2	6.4	<0.8

PARAMETER	UOM	LOR	BH8-600	BH9-400	BH9-600	BH10-300	BH10-500
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.016	24/4/2024 SE264336.017	24/4/2024 SE264336.018	24/4/2024 SE264336.019	24/4/2024 SE264336.020
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 29/4/2024 (continued)

PARAMETER	UOM	LOR	BH11-300	BH11-500	BH12-300	BH12-500	BH13-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.021	24/4/2024 SE264336.022	24/4/2024 SE264336.023	24/4/2024 SE264336.024	24/4/2024 SE264336.025
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	BH13-600	BH13-800	HS1
			SOIL	SOIL	SOIL
			24/4/2024 SE264336.026	24/4/2024 SE264336.027	24/4/2024 SE264336.030
Naphthalene	mg/kg	0.1	<0.1	<0.1	0.2
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	1.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	0.3
Phenanthrene	mg/kg	0.1	<0.1	<0.1	5.1
Anthracene	mg/kg	0.1	<0.1	<0.1	1.5
Fluoranthene	mg/kg	0.1	<0.1	<0.1	6.5
Pyrene	mg/kg	0.1	<0.1	<0.1	7.9
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	3.5
Chrysene	mg/kg	0.1	<0.1	<0.1	3.8
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	3.9
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	1.4
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	3.4
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	1.7
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	0.5
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	1.7
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	4.9
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	4.9
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	4.9
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	43
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	43

OC Pesticides in Soil [AN420] Tested: 29/4/2024

PARAMETER	UOM	LOR	BH1-300	BH1-800	BH2-300	BH2-500	BH3-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.001	24/4/2024 SE264336.002	24/4/2024 SE264336.003	24/4/2024 SE264336.004	24/4/2024 SE264336.005
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 29/4/2024 (continued)

PARAMETER	UOM	LOR	BH3-600	BH4-300	BH4-500	BH5-200	BH5-400
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.006	24/4/2024 SE264336.007	24/4/2024 SE264336.008	24/4/2024 SE264336.009	24/4/2024 SE264336.010
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 29/4/2024 (continued)

PARAMETER	UOM	LOR	BH6-200	BH6-500	BH7-200	BH7-400	BH8-200
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.011	24/4/2024 SE264336.012	24/4/2024 SE264336.013	24/4/2024 SE264336.014	24/4/2024 SE264336.015
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 29/4/2024 (continued)

PARAMETER	UOM	LOR	BH8-600	BH9-400	BH9-600	BH10-300	BH10-500
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.016	24/4/2024 SE264336.017	24/4/2024 SE264336.018	24/4/2024 SE264336.019	24/4/2024 SE264336.020
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 29/4/2024 (continued)

PARAMETER	UOM	LOR	BH11-300	BH11-500	BH12-300	BH12-500	BH13-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.021	24/4/2024 SE264336.022	24/4/2024 SE264336.023	24/4/2024 SE264336.024	24/4/2024 SE264336.025
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 29/4/2024 (continued)

PARAMETER	UOM	LOR	BH13-600	BH13-800
			SOIL - 24/4/2024 SE264336.026	SOIL - 24/4/2024 SE264336.027
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1

OP Pesticides in Soil [AN420] Tested: 29/4/2024

PARAMETER	UOM	LOR	BH1-300	BH1-800	BH2-300	BH2-500	BH3-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.001	24/4/2024 SE264336.002	24/4/2024 SE264336.003	24/4/2024 SE264336.004	24/4/2024 SE264336.005
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

PARAMETER	UOM	LOR	BH3-600	BH4-300	BH4-500	BH5-200	BH5-400
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.006	24/4/2024 SE264336.007	24/4/2024 SE264336.008	24/4/2024 SE264336.009	24/4/2024 SE264336.010
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

PARAMETER	UOM	LOR	BH6-200	BH6-500	BH7-200	BH7-400	BH8-200
			SOIL	SOIL	SOIL	SOIL	SOIL
			24/4/2024 SE264336.011	24/4/2024 SE264336.012	24/4/2024 SE264336.013	24/4/2024 SE264336.014	24/4/2024 SE264336.015
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

OP Pesticides in Soil [AN420] Tested: 29/4/2024 (continued)

			BH8-600	BH9-400	BH9-600	BH10-300	BH10-500
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024	24/4/2024	24/4/2024	24/4/2024	24/4/2024
			SE264336.016	SE264336.017	SE264336.018	SE264336.019	SE264336.020
PARAMETER	UOM	LOR					
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

			BH11-300	BH11-500	BH12-300	BH12-500	BH13-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024	24/4/2024	24/4/2024	24/4/2024	24/4/2024
			SE264336.021	SE264336.022	SE264336.023	SE264336.024	SE264336.025
PARAMETER	UOM	LOR					
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

			BH13-600	BH13-800
			SOIL	SOIL
			-	-
			24/4/2024	24/4/2024
			SE264336.026	SE264336.027
PARAMETER	UOM	LOR		
Dichlorvos	mg/kg	0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 29/4/2024

PARAMETER	UOM	LOR	BH1-300	BH1-800	BH2-300	BH2-500	BH3-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.001	24/4/2024 SE264336.002	24/4/2024 SE264336.003	24/4/2024 SE264336.004	24/4/2024 SE264336.005
Arsenic, As	mg/kg	1	6	3	2	4	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	19	17	5.7	18	8.6
Copper, Cu	mg/kg	0.5	29	15	22	24	2.2
Lead, Pb	mg/kg	1	120	11	3	59	3
Nickel, Ni	mg/kg	0.5	6.7	11	4.7	8.0	5.6
Zinc, Zn	mg/kg	2	110	20	8.5	180	32

PARAMETER	UOM	LOR	BH3-600	BH4-300	BH4-500	BH5-200	BH5-400
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.006	24/4/2024 SE264336.007	24/4/2024 SE264336.008	24/4/2024 SE264336.009	24/4/2024 SE264336.010
Arsenic, As	mg/kg	1	4	1	3	3	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	22	9.8	21	15	22
Copper, Cu	mg/kg	0.5	15	4.1	13	8.0	16
Lead, Pb	mg/kg	1	9	2	10	29	17
Nickel, Ni	mg/kg	0.5	11	6.5	12	9.2	13
Zinc, Zn	mg/kg	2	23	30	30	100	52

PARAMETER	UOM	LOR	BH6-200	BH6-500	BH7-200	BH7-400	BH8-200
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.011	24/4/2024 SE264336.012	24/4/2024 SE264336.013	24/4/2024 SE264336.014	24/4/2024 SE264336.015
Arsenic, As	mg/kg	1	2	4	3	10	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	13	24	15	18	17
Copper, Cu	mg/kg	0.5	5.8	18	9.6	20	7.0
Lead, Pb	mg/kg	1	10	21	22	90	9
Nickel, Ni	mg/kg	0.5	8.5	11	13	6.6	11
Zinc, Zn	mg/kg	2	71	53	86	130	68

PARAMETER	UOM	LOR	BH8-600	BH9-400	BH9-600	BH10-300	BH10-500
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.016	24/4/2024 SE264336.017	24/4/2024 SE264336.018	24/4/2024 SE264336.019	24/4/2024 SE264336.020
Arsenic, As	mg/kg	1	4	2	2	3	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	25	13	9.7	14	12
Copper, Cu	mg/kg	0.5	21	8.6	7.7	12	10
Lead, Pb	mg/kg	1	14	9	8	7	8
Nickel, Ni	mg/kg	0.5	12	8.8	7.7	8.8	9.5
Zinc, Zn	mg/kg	2	35	31	18	37	17

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 29/4/2024 (continued)

PARAMETER	UOM	LOR	BH11-300	BH11-500	BH12-300	BH12-500	BH13-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.021	24/4/2024 SE264336.022	24/4/2024 SE264336.023	24/4/2024 SE264336.024	24/4/2024 SE264336.025
Arsenic, As	mg/kg	1	2	2	2	2	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	10	13	16	15	6.4
Copper, Cu	mg/kg	0.5	5.6	9.1	4.1	9.5	12
Lead, Pb	mg/kg	1	3	8	5	8	6
Nickel, Ni	mg/kg	0.5	6.6	7.8	11	9.1	2.8
Zinc, Zn	mg/kg	2	34	18	49	18	23

PARAMETER	UOM	LOR	BH13-600	BH13-800	DA	DB	HS1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.026	24/4/2024 SE264336.027	24/4/2024 SE264336.028	24/4/2024 SE264336.029	24/4/2024 SE264336.030
Arsenic, As	mg/kg	1	3	3	3	2	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	1.2
Chromium, Cr	mg/kg	0.5	12	20	15	12	30
Copper, Cu	mg/kg	0.5	5.9	14	31	11	83
Lead, Pb	mg/kg	1	12	9	120	7	110
Nickel, Ni	mg/kg	0.5	7.2	9.9	6.5	11	27
Zinc, Zn	mg/kg	2	51	27	140	18	1900

Mercury in Soil [AN312] Tested: 29/4/2024

PARAMETER	UOM	LOR	BH1-300	BH1-800	BH2-300	BH2-500	BH3-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.001	24/4/2024 SE264336.002	24/4/2024 SE264336.003	24/4/2024 SE264336.004	24/4/2024 SE264336.005
Mercury	mg/kg	0.05	0.36	<0.05	<0.05	0.10	<0.05

PARAMETER	UOM	LOR	BH3-600	BH4-300	BH4-500	BH5-200	BH5-400
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.006	24/4/2024 SE264336.007	24/4/2024 SE264336.008	24/4/2024 SE264336.009	24/4/2024 SE264336.010
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH6-200	BH6-500	BH7-200	BH7-400	BH8-200
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.011	24/4/2024 SE264336.012	24/4/2024 SE264336.013	24/4/2024 SE264336.014	24/4/2024 SE264336.015
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	0.22	<0.05

PARAMETER	UOM	LOR	BH8-600	BH9-400	BH9-600	BH10-300	BH10-500
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.016	24/4/2024 SE264336.017	24/4/2024 SE264336.018	24/4/2024 SE264336.019	24/4/2024 SE264336.020
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH11-300	BH11-500	BH12-300	BH12-500	BH13-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.021	24/4/2024 SE264336.022	24/4/2024 SE264336.023	24/4/2024 SE264336.024	24/4/2024 SE264336.025
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH13-600	BH13-800	DA	DB	HS1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.026	24/4/2024 SE264336.027	24/4/2024 SE264336.028	24/4/2024 SE264336.029	24/4/2024 SE264336.030
Mercury	mg/kg	0.05	<0.05	<0.05	0.31	<0.05	<0.05

Moisture Content [AN002] Tested: 29/4/2024

PARAMETER	UOM	LOR	BH1-300	BH1-800	BH2-300	BH2-500	BH3-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.001	24/4/2024 SE264336.002	24/4/2024 SE264336.003	24/4/2024 SE264336.004	24/4/2024 SE264336.005
% Moisture	%w/w	1	15.4	20.0	3.8	18.7	12.0

PARAMETER	UOM	LOR	BH3-600	BH4-300	BH4-500	BH5-200	BH5-400
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.006	24/4/2024 SE264336.007	24/4/2024 SE264336.008	24/4/2024 SE264336.009	24/4/2024 SE264336.010
% Moisture	%w/w	1	21.2	6.7	19.9	5.3	22.6

PARAMETER	UOM	LOR	BH6-200	BH6-500	BH7-200	BH7-400	BH8-200
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.011	24/4/2024 SE264336.012	24/4/2024 SE264336.013	24/4/2024 SE264336.014	24/4/2024 SE264336.015
% Moisture	%w/w	1	5.4	19.8	6.1	13.5	5.1

PARAMETER	UOM	LOR	BH8-600	BH9-400	BH9-600	BH10-300	BH10-500
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.016	24/4/2024 SE264336.017	24/4/2024 SE264336.018	24/4/2024 SE264336.019	24/4/2024 SE264336.020
% Moisture	%w/w	1	23.8	21.6	21.5	14.5	18.5

PARAMETER	UOM	LOR	BH11-300	BH11-500	BH12-300	BH12-500	BH13-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.021	24/4/2024 SE264336.022	24/4/2024 SE264336.023	24/4/2024 SE264336.024	24/4/2024 SE264336.025
% Moisture	%w/w	1	10.8	17.5	7.8	17.5	7.0

PARAMETER	UOM	LOR	BH13-600	BH13-800	DA	DB	HS1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024 SE264336.026	24/4/2024 SE264336.027	24/4/2024 SE264336.028	24/4/2024 SE264336.029	24/4/2024 SE264336.030
% Moisture	%w/w	1	11.7	18.0	15.3	14.8	21.4

Fibre Identification in soil [AS4964/AN602] Tested: 30/4/2024

			BH1-300	BH1-800	BH2-300	BH2-500	BH3-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024	24/4/2024	24/4/2024	24/4/2024	24/4/2024
PARAMETER	UOM	LOR	SE264336.001	SE264336.002	SE264336.003	SE264336.004	SE264336.005
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Date Analysed*	No unit	-	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00

			BH3-600	BH4-300	BH4-500	BH5-200	BH5-400
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024	24/4/2024	24/4/2024	24/4/2024	24/4/2024
PARAMETER	UOM	LOR	SE264336.006	SE264336.007	SE264336.008	SE264336.009	SE264336.010
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Date Analysed*	No unit	-	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00

			BH6-200	BH6-500	BH7-200	BH7-400	BH8-200
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024	24/4/2024	24/4/2024	24/4/2024	24/4/2024
PARAMETER	UOM	LOR	SE264336.011	SE264336.012	SE264336.013	SE264336.014	SE264336.015
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Date Analysed*	No unit	-	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00

			BH8-600	BH9-400	BH9-600	BH10-300	BH10-500
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024	24/4/2024	24/4/2024	24/4/2024	24/4/2024
PARAMETER	UOM	LOR	SE264336.016	SE264336.017	SE264336.018	SE264336.019	SE264336.020
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Date Analysed*	No unit	-	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00

			BH11-300	BH11-500	BH12-300	BH12-500	BH13-300
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			24/4/2024	24/4/2024	24/4/2024	24/4/2024	24/4/2024
PARAMETER	UOM	LOR	SE264336.021	SE264336.022	SE264336.023	SE264336.024	SE264336.025
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Date Analysed*	No unit	-	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00	02/05/2024 00:00

			BH13-600	BH13-800
			SOIL	SOIL
			-	-
			24/4/2024	24/4/2024
PARAMETER	UOM	LOR	SE264336.026	SE264336.027
Asbestos Detected	No unit	-	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01
Date Analysed*	No unit	-	02/05/2024 00:00	02/05/2024 00:00

METHOD

METHODOLOGY SUMMARY

AN002

The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.

AN040/AN320

A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.

AN040

A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by AAS or ICP as per USEPA Method 200.8.

AN312

Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500

AN403

Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.

AN403

Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.

AN403

The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.

AN420

(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).

Total PAH calculated from individual analyte detections at or above the limit of reporting.

AN420

SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).

AN433

VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

AN602/AS4964

Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.

AN602/AS4964

Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf). The fibres detected may or may not be asbestos fibres.

AN602/AS4964

AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states: "Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

AN602/AS4964

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

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

FOOTNOTES

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

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

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

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

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

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

Note that in terms of units of radioactivity:

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

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

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

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Project **44202**
Order Number **44202**
Samples 27

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SGS Reference **SE264336 R0**
Date Received 26 Apr 2024
Date Reported 03 May 2024

COMMENTS

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

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

Sample #3: A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin

SIGNATORIES



Ravee SIVASUBRAMANIAM
Hygiene Team Leader

RESULTS

Fibre Identification in soil

Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Date Analysed	Fibre Identification	Est.%w/w*
SE264336.001	BH1-300	Soil	159g Clay, Sand, Soil, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE264336.002	BH1-800	Soil	131g Clay, Sand, Soil, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.003	BH2-300	Soil	52g Clay, Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.004	BH2-500	Soil	139g Clay, Sand, Soil, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.005	BH3-300	Soil	187g Clay, Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.006	BH3-600	Soil	122g Clay, Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.007	BH4-300	Soil	190g Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.008	BH4-500	Soil	139g Clay, Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.009	BH5-200	Soil	181g Clay, Sand, Soil, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.010	BH5-400	Soil	129g Clay, Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.011	BH6-200	Soil	162g Clay, Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.012	BH6-500	Soil	115g Clay, Sand, Soil, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.013	BH7-200	Soil	181g Clay, Sand, Soil, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.014	BH7-400	Soil	160g Clay, Sand, Soil, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.015	BH8-200	Soil	159g Sand, Soil, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.016	BH8-600	Soil	113g Clay, Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.017	BH9-400	Soil	170g Clay, Sand, Soil, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.018	BH9-600	Soil	132g Clay, Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.019	BH10-300	Soil	147g Clay, Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.020	BH10-500	Soil	150g Clay, Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.021	BH11-300	Soil	166g Clay, Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.022	BH11-500	Soil	137g Clay, Sand, Soil, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.023	BH12-300	Soil	171g Clay, Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01

RESULTS

Fibre Identification in soil

Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Date Analysed	Fibre Identification	Est.%w/w*
SE264336.024	BH12-500	Soil	130g Clay, Sand, Soil, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.025	BH13-300	Soil	170g Clay, Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.026	BH13-600	Soil	172g Clay, Sand, Soil, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE264336.027	BH13-800	Soil	122g Clay, Sand, Rocks	24 Apr 2024	02 May 2024	No Asbestos Found at RL of 0.1g/kg	<0.01

METHOD

METHODOLOGY SUMMARY

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

FOOTNOTES

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

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

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

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

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

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

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

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

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

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STATEMENT OF QA/QC PERFORMANCE

SE264336 R0

CLIENT DETAILS

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Project **44202**
Order Number **44202**
Samples 30

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SGS Reference **SE264336 R0**
Date Received 26 Apr 2024
Date Reported 03 May 2024

COMMENTS

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

The data relating to sampling was taken from the Chain of Custody document.

This QA/QC Statement must be read in conjunction with the referenced Analytical Report.

The Statement and the Analytical Report must not be reproduced except in full.

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

Surrogate	VOC's in Soil	4 items
	Volatile Petroleum Hydrocarbons in Soil	4 items
Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
	TRH (Total Recoverable Hydrocarbons) in Soil	2 items

SAMPLE SUMMARY

Sample counts by matrix	30 Soil	Type of documentation received	COC
Date documentation received	26/4/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	19.3°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		



HOLDING TIME SUMMARY

SE264336 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

Fibre Identification in soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-300	SE264336.001	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH1-800	SE264336.002	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH2-300	SE264336.003	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH2-500	SE264336.004	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH3-300	SE264336.005	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH3-600	SE264336.006	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH4-300	SE264336.007	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH4-500	SE264336.008	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH5-200	SE264336.009	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH5-400	SE264336.010	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH6-200	SE264336.011	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH6-500	SE264336.012	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH7-200	SE264336.013	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH7-400	SE264336.014	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH8-200	SE264336.015	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH8-600	SE264336.016	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH9-400	SE264336.017	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH9-600	SE264336.018	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH10-300	SE264336.019	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH10-500	SE264336.020	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH11-300	SE264336.021	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH11-500	SE264336.022	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH12-300	SE264336.023	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH12-500	SE264336.024	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH13-300	SE264336.025	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH13-600	SE264336.026	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024
BH13-800	SE264336.027	LB311040	24 Apr 2024	26 Apr 2024	24 Apr 2025	30 Apr 2024	24 Apr 2025	03 May 2024

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-300	SE264336.001	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH1-800	SE264336.002	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH2-300	SE264336.003	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH2-500	SE264336.004	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH3-300	SE264336.005	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH3-600	SE264336.006	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH4-300	SE264336.007	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH4-500	SE264336.008	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH5-200	SE264336.009	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH5-400	SE264336.010	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH6-200	SE264336.011	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH6-500	SE264336.012	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH7-200	SE264336.013	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH7-400	SE264336.014	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH8-200	SE264336.015	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH8-600	SE264336.016	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH9-400	SE264336.017	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH9-600	SE264336.018	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH10-300	SE264336.019	LB310903	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH10-500	SE264336.020	LB310934	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH11-300	SE264336.021	LB310934	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH11-500	SE264336.022	LB310934	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH12-300	SE264336.023	LB310934	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH12-500	SE264336.024	LB310934	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH13-300	SE264336.025	LB310934	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH13-600	SE264336.026	LB310934	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
BH13-800	SE264336.027	LB310934	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
DA	SE264336.028	LB310934	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
DB	SE264336.029	LB310934	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024
HS1	SE264336.030	LB310934	24 Apr 2024	26 Apr 2024	22 May 2024	29 Apr 2024	22 May 2024	01 May 2024



HOLDING TIME SUMMARY

SE264336 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

Moisture Content

Method: ME-(AU)-ENVJAN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-300	SE264336.001	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH1-800	SE264336.002	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH2-300	SE264336.003	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH2-500	SE264336.004	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH3-300	SE264336.005	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH3-600	SE264336.006	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH4-300	SE264336.007	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH4-500	SE264336.008	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH5-200	SE264336.009	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH5-400	SE264336.010	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH6-200	SE264336.011	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH6-500	SE264336.012	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH7-200	SE264336.013	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH7-400	SE264336.014	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH8-200	SE264336.015	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH8-600	SE264336.016	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH9-400	SE264336.017	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH9-600	SE264336.018	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH10-300	SE264336.019	LB310904	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	01 May 2024
BH10-500	SE264336.020	LB310935	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	30 Apr 2024
BH11-300	SE264336.021	LB310935	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	30 Apr 2024
BH11-500	SE264336.022	LB310935	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	30 Apr 2024
BH12-300	SE264336.023	LB310935	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	30 Apr 2024
BH12-500	SE264336.024	LB310935	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	30 Apr 2024
BH13-300	SE264336.025	LB310935	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	30 Apr 2024
BH13-600	SE264336.026	LB310935	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	30 Apr 2024
BH13-800	SE264336.027	LB310935	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	30 Apr 2024
DA	SE264336.028	LB310935	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	30 Apr 2024
DB	SE264336.029	LB310935	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	30 Apr 2024
HS1	SE264336.030	LB310935	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	04 May 2024	30 Apr 2024

OC Pesticides in Soil

Method: ME-(AU)-ENVJAN020

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-300	SE264336.001	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH1-800	SE264336.002	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH2-300	SE264336.003	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH2-500	SE264336.004	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH3-300	SE264336.005	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH3-600	SE264336.006	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH4-300	SE264336.007	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH4-500	SE264336.008	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH5-200	SE264336.009	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH5-400	SE264336.010	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH6-200	SE264336.011	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH6-500	SE264336.012	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH7-200	SE264336.013	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH7-400	SE264336.014	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH8-200	SE264336.015	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH8-600	SE264336.016	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH9-400	SE264336.017	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH9-600	SE264336.018	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH10-300	SE264336.019	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	02 May 2024
BH10-500	SE264336.020	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH11-300	SE264336.021	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH11-500	SE264336.022	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH12-300	SE264336.023	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH12-500	SE264336.024	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH13-300	SE264336.025	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH13-600	SE264336.026	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH13-800	SE264336.027	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024



HOLDING TIME SUMMARY

SE264336 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

OC Pesticides in Soil (continued)

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS1	SE264336.030	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	03 May 2024

OP Pesticides in Soil

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-300	SE264336.001	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH1-800	SE264336.002	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH2-300	SE264336.003	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH2-500	SE264336.004	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH3-300	SE264336.005	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH3-600	SE264336.006	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH4-300	SE264336.007	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH4-500	SE264336.008	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH5-200	SE264336.009	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH5-400	SE264336.010	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH6-200	SE264336.011	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH6-500	SE264336.012	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH7-200	SE264336.013	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH7-400	SE264336.014	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH8-200	SE264336.015	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH8-600	SE264336.016	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH9-400	SE264336.017	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH9-600	SE264336.018	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH10-300	SE264336.019	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH10-500	SE264336.020	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH11-300	SE264336.021	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH11-500	SE264336.022	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH12-300	SE264336.023	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH12-500	SE264336.024	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH13-300	SE264336.025	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH13-600	SE264336.026	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH13-800	SE264336.027	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
HS1	SE264336.030	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	03 May 2024

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-300	SE264336.001	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH1-800	SE264336.002	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH2-300	SE264336.003	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH2-500	SE264336.004	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH3-300	SE264336.005	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH3-600	SE264336.006	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH4-300	SE264336.007	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH4-500	SE264336.008	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH5-200	SE264336.009	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH5-400	SE264336.010	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH6-200	SE264336.011	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH6-500	SE264336.012	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH7-200	SE264336.013	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH7-400	SE264336.014	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH8-200	SE264336.015	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH8-600	SE264336.016	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH9-400	SE264336.017	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH9-600	SE264336.018	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH10-300	SE264336.019	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH10-500	SE264336.020	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH11-300	SE264336.021	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH11-500	SE264336.022	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH12-300	SE264336.023	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH12-500	SE264336.024	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH13-300	SE264336.025	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH13-600	SE264336.026	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024



HOLDING TIME SUMMARY

SE264336 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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH13-800	SE264336.027	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
HS1	SE264336.030	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024

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

Method: ME-(AU)-[ENV]JAN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-300	SE264336.001	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH1-800	SE264336.002	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH2-300	SE264336.003	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH2-500	SE264336.004	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH3-300	SE264336.005	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH3-600	SE264336.006	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH4-300	SE264336.007	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH4-500	SE264336.008	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH5-200	SE264336.009	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH5-400	SE264336.010	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH6-200	SE264336.011	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH6-500	SE264336.012	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH7-200	SE264336.013	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH7-400	SE264336.014	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH8-200	SE264336.015	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH8-600	SE264336.016	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH9-400	SE264336.017	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH9-600	SE264336.018	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH10-300	SE264336.019	LB310902	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	01 May 2024
BH10-500	SE264336.020	LB310925	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	02 May 2024
BH11-300	SE264336.021	LB310925	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	02 May 2024
BH11-500	SE264336.022	LB310925	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	02 May 2024
BH12-300	SE264336.023	LB310925	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	02 May 2024
BH12-500	SE264336.024	LB310925	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	02 May 2024
BH13-300	SE264336.025	LB310925	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	02 May 2024
BH13-600	SE264336.026	LB310925	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	02 May 2024
BH13-800	SE264336.027	LB310925	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	02 May 2024
DA	SE264336.028	LB310925	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	02 May 2024
DB	SE264336.029	LB310925	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	02 May 2024
HS1	SE264336.030	LB310925	24 Apr 2024	26 Apr 2024	21 Oct 2024	29 Apr 2024	21 Oct 2024	02 May 2024

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-300	SE264336.001	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH1-800	SE264336.002	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH2-300	SE264336.003	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH2-500	SE264336.004	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH3-300	SE264336.005	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH3-600	SE264336.006	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH4-300	SE264336.007	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH4-500	SE264336.008	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH5-200	SE264336.009	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH5-400	SE264336.010	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH6-200	SE264336.011	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH6-500	SE264336.012	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH7-200	SE264336.013	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH7-400	SE264336.014	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH8-200	SE264336.015	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH8-600	SE264336.016	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH9-400	SE264336.017	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH9-600	SE264336.018	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH10-300	SE264336.019	LB310900	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH10-500	SE264336.020	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH11-300	SE264336.021	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH11-500	SE264336.022	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH12-300	SE264336.023	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024



HOLDING TIME SUMMARY

SE264336 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

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-ENVJAN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH12-500	SE264336.024	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH13-300	SE264336.025	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH13-600	SE264336.026	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
BH13-800	SE264336.027	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024
HS1	SE264336.030	LB310932	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 Jun 2024	01 May 2024

VOC's in Soil

Method: ME-(AU)-ENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-300	SE264336.001	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH1-800	SE264336.002	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH2-300	SE264336.003	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH2-500	SE264336.004	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH3-300	SE264336.005	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH3-600	SE264336.006	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH4-300	SE264336.007	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH4-500	SE264336.008	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH5-200	SE264336.009	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH5-400	SE264336.010	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH6-200	SE264336.011	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH6-500	SE264336.012	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH7-200	SE264336.013	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH7-400	SE264336.014	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH8-200	SE264336.015	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH8-600	SE264336.016	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH9-400	SE264336.017	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH9-600	SE264336.018	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH10-300	SE264336.019	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH10-500	SE264336.020	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH11-300	SE264336.021	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH11-500	SE264336.022	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH12-300	SE264336.023	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH12-500	SE264336.024	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH13-300	SE264336.025	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH13-600	SE264336.026	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH13-800	SE264336.027	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
HS1	SE264336.030	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-ENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-300	SE264336.001	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH1-800	SE264336.002	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH2-300	SE264336.003	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH2-500	SE264336.004	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH3-300	SE264336.005	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH3-600	SE264336.006	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH4-300	SE264336.007	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH4-500	SE264336.008	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH5-200	SE264336.009	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH5-400	SE264336.010	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH6-200	SE264336.011	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH6-500	SE264336.012	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH7-200	SE264336.013	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH7-400	SE264336.014	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH8-200	SE264336.015	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH8-600	SE264336.016	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH9-400	SE264336.017	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH9-600	SE264336.018	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH10-300	SE264336.019	LB310901	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH10-500	SE264336.020	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH11-300	SE264336.021	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH11-500	SE264336.022	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024



HOLDING TIME SUMMARY

SE264336 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

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-ENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH12-300	SE264336.023	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH12-500	SE264336.024	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH13-300	SE264336.025	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH13-600	SE264336.026	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
BH13-800	SE264336.027	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024
HS1	SE264336.030	LB310933	24 Apr 2024	26 Apr 2024	08 May 2024	29 Apr 2024	08 May 2024	01 May 2024

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

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

OC Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH1-300	SE264336.001	%	60 - 130%	92
	BH1-800	SE264336.002	%	60 - 130%	97
	BH2-300	SE264336.003	%	60 - 130%	91
	BH2-500	SE264336.004	%	60 - 130%	95
	BH3-300	SE264336.005	%	60 - 130%	96
	BH3-600	SE264336.006	%	60 - 130%	103
	BH4-300	SE264336.007	%	60 - 130%	95
	BH4-500	SE264336.008	%	60 - 130%	98
	BH5-200	SE264336.009	%	60 - 130%	98
	BH5-400	SE264336.010	%	60 - 130%	99
	BH6-200	SE264336.011	%	60 - 130%	93
	BH6-500	SE264336.012	%	60 - 130%	101
	BH7-200	SE264336.013	%	60 - 130%	93
	BH7-400	SE264336.014	%	60 - 130%	98
	BH8-200	SE264336.015	%	60 - 130%	95
	BH8-600	SE264336.016	%	60 - 130%	100
	BH9-400	SE264336.017	%	60 - 130%	100
	BH9-600	SE264336.018	%	60 - 130%	94
	BH10-300	SE264336.019	%	60 - 130%	98
	BH10-500	SE264336.020	%	60 - 130%	123
	BH11-300	SE264336.021	%	60 - 130%	116
	BH11-500	SE264336.022	%	60 - 130%	115
	BH12-300	SE264336.023	%	60 - 130%	116
	BH12-500	SE264336.024	%	60 - 130%	111
	BH13-300	SE264336.025	%	60 - 130%	94
	BH13-600	SE264336.026	%	60 - 130%	94
	BH13-800	SE264336.027	%	60 - 130%	94

OP Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1-300	SE264336.001	%	60 - 130%	100
	BH1-800	SE264336.002	%	60 - 130%	89
	BH2-300	SE264336.003	%	60 - 130%	92
	BH2-500	SE264336.004	%	60 - 130%	98
	BH3-300	SE264336.005	%	60 - 130%	88
	BH3-600	SE264336.006	%	60 - 130%	93
	BH4-300	SE264336.007	%	60 - 130%	98
	BH4-500	SE264336.008	%	60 - 130%	86
	BH5-200	SE264336.009	%	60 - 130%	88
	BH5-400	SE264336.010	%	60 - 130%	85
	BH6-200	SE264336.011	%	60 - 130%	89
	BH6-500	SE264336.012	%	60 - 130%	87
	BH7-200	SE264336.013	%	60 - 130%	95
	BH7-400	SE264336.014	%	60 - 130%	88
	BH8-200	SE264336.015	%	60 - 130%	89
	BH8-600	SE264336.016	%	60 - 130%	90
	BH9-400	SE264336.017	%	60 - 130%	81
	BH9-600	SE264336.018	%	60 - 130%	84
	BH10-300	SE264336.019	%	60 - 130%	93
	BH10-500	SE264336.020	%	60 - 130%	95
	BH11-300	SE264336.021	%	60 - 130%	97
	BH11-500	SE264336.022	%	60 - 130%	95
	BH12-300	SE264336.023	%	60 - 130%	87
	BH12-500	SE264336.024	%	60 - 130%	89
	BH13-300	SE264336.025	%	60 - 130%	94
	BH13-600	SE264336.026	%	60 - 130%	97
	BH13-800	SE264336.027	%	60 - 130%	97
d14-p-terphenyl (Surrogate)	BH1-300	SE264336.001	%	60 - 130%	121
	BH1-800	SE264336.002	%	60 - 130%	116
	BH2-300	SE264336.003	%	60 - 130%	105
	BH2-500	SE264336.004	%	60 - 130%	108

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

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

OP Pesticides in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d14-p-terphenyl (Surrogate)	BH3-300	SE264336.005	%	60 - 130%	103
	BH3-600	SE264336.006	%	60 - 130%	108
	BH4-300	SE264336.007	%	60 - 130%	102
	BH4-500	SE264336.008	%	60 - 130%	113
	BH5-200	SE264336.009	%	60 - 130%	106
	BH5-400	SE264336.010	%	60 - 130%	106
	BH6-200	SE264336.011	%	60 - 130%	114
	BH6-500	SE264336.012	%	60 - 130%	106
	BH7-200	SE264336.013	%	60 - 130%	115
	BH7-400	SE264336.014	%	60 - 130%	113
	BH8-200	SE264336.015	%	60 - 130%	110
	BH8-600	SE264336.016	%	60 - 130%	112
	BH9-400	SE264336.017	%	60 - 130%	106
	BH9-600	SE264336.018	%	60 - 130%	107
	BH10-300	SE264336.019	%	60 - 130%	115
	BH10-500	SE264336.020	%	60 - 130%	111
	BH11-300	SE264336.021	%	60 - 130%	112
	BH11-500	SE264336.022	%	60 - 130%	119
	BH12-300	SE264336.023	%	60 - 130%	103
	BH12-500	SE264336.024	%	60 - 130%	111
	BH13-300	SE264336.025	%	60 - 130%	107
	BH13-600	SE264336.026	%	60 - 130%	109
	BH13-800	SE264336.027	%	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)	BH1-300	SE264336.001	%	70 - 130%	100
	BH1-800	SE264336.002	%	70 - 130%	89
	BH2-300	SE264336.003	%	70 - 130%	92
	BH2-500	SE264336.004	%	70 - 130%	98
	BH3-300	SE264336.005	%	70 - 130%	88
	BH3-600	SE264336.006	%	70 - 130%	93
	BH4-300	SE264336.007	%	70 - 130%	98
	BH4-500	SE264336.008	%	70 - 130%	86
	BH5-200	SE264336.009	%	70 - 130%	88
	BH5-400	SE264336.010	%	70 - 130%	85
	BH6-200	SE264336.011	%	70 - 130%	89
	BH6-500	SE264336.012	%	70 - 130%	87
	BH7-200	SE264336.013	%	70 - 130%	95
	BH7-400	SE264336.014	%	70 - 130%	88
	BH8-200	SE264336.015	%	70 - 130%	89
	BH8-600	SE264336.016	%	70 - 130%	90
	BH9-400	SE264336.017	%	70 - 130%	81
	BH9-600	SE264336.018	%	70 - 130%	84
	BH10-300	SE264336.019	%	70 - 130%	93
	BH10-500	SE264336.020	%	70 - 130%	95
	BH11-300	SE264336.021	%	70 - 130%	97
	BH11-500	SE264336.022	%	70 - 130%	95
	BH12-300	SE264336.023	%	70 - 130%	87
	BH12-500	SE264336.024	%	70 - 130%	89
	BH13-300	SE264336.025	%	70 - 130%	94
	BH13-600	SE264336.026	%	70 - 130%	97
	BH13-800	SE264336.027	%	70 - 130%	97
	HS1	SE264336.030	%	70 - 130%	101
d14-p-terphenyl (Surrogate)	BH1-300	SE264336.001	%	70 - 130%	121
	BH1-800	SE264336.002	%	70 - 130%	116
	BH2-300	SE264336.003	%	70 - 130%	105
	BH2-500	SE264336.004	%	70 - 130%	108
	BH3-300	SE264336.005	%	70 - 130%	103
	BH3-600	SE264336.006	%	70 - 130%	108
	BH4-300	SE264336.007	%	70 - 130%	102

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d14-p-terphenyl (Surrogate)	BH4-500	SE264336.008	%	70 - 130%	113
	BH5-200	SE264336.009	%	70 - 130%	106
	BH5-400	SE264336.010	%	70 - 130%	106
	BH6-200	SE264336.011	%	70 - 130%	114
	BH6-500	SE264336.012	%	70 - 130%	106
	BH7-200	SE264336.013	%	70 - 130%	115
	BH7-400	SE264336.014	%	70 - 130%	113
	BH8-200	SE264336.015	%	70 - 130%	110
	BH8-600	SE264336.016	%	70 - 130%	112
	BH9-400	SE264336.017	%	70 - 130%	106
	BH9-600	SE264336.018	%	70 - 130%	107
	BH10-300	SE264336.019	%	70 - 130%	115
	BH10-500	SE264336.020	%	70 - 130%	111
	BH11-300	SE264336.021	%	70 - 130%	112
	BH11-500	SE264336.022	%	70 - 130%	119
	BH12-300	SE264336.023	%	70 - 130%	103
	BH12-500	SE264336.024	%	70 - 130%	111
	BH13-300	SE264336.025	%	70 - 130%	107
	BH13-600	SE264336.026	%	70 - 130%	109
	BH13-800	SE264336.027	%	70 - 130%	113
d5-nitrobenzene (Surrogate)	HS1	SE264336.030	%	70 - 130%	110
	BH1-300	SE264336.001	%	70 - 130%	103
	BH1-800	SE264336.002	%	70 - 130%	95
	BH2-300	SE264336.003	%	70 - 130%	103
	BH2-500	SE264336.004	%	70 - 130%	105
	BH3-300	SE264336.005	%	70 - 130%	102
	BH3-600	SE264336.006	%	70 - 130%	84
	BH4-300	SE264336.007	%	70 - 130%	103
	BH4-500	SE264336.008	%	70 - 130%	97
	BH5-200	SE264336.009	%	70 - 130%	105
	BH5-400	SE264336.010	%	70 - 130%	102
	BH6-200	SE264336.011	%	70 - 130%	109
	BH6-500	SE264336.012	%	70 - 130%	104
	BH7-200	SE264336.013	%	70 - 130%	108
	BH7-400	SE264336.014	%	70 - 130%	106
	BH8-200	SE264336.015	%	70 - 130%	107
	BH8-600	SE264336.016	%	70 - 130%	105
	BH9-400	SE264336.017	%	70 - 130%	99
	BH9-600	SE264336.018	%	70 - 130%	102
	BH10-300	SE264336.019	%	70 - 130%	103
	BH10-500	SE264336.020	%	70 - 130%	94
	BH11-300	SE264336.021	%	70 - 130%	100
	BH11-500	SE264336.022	%	70 - 130%	103
	BH12-300	SE264336.023	%	70 - 130%	88
	BH12-500	SE264336.024	%	70 - 130%	99
	BH13-300	SE264336.025	%	70 - 130%	94
	BH13-600	SE264336.026	%	70 - 130%	100
	BH13-800	SE264336.027	%	70 - 130%	95
	HS1	SE264336.030	%	70 - 130%	107

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1-300	SE264336.001	%	60 - 130%	85
	BH1-800	SE264336.002	%	60 - 130%	112
	BH2-300	SE264336.003	%	60 - 130%	119
	BH2-500	SE264336.004	%	60 - 130%	107
	BH3-300	SE264336.005	%	60 - 130%	105
	BH3-600	SE264336.006	%	60 - 130%	97
	BH4-300	SE264336.007	%	60 - 130%	102
	BH4-500	SE264336.008	%	60 - 130%	103
	BH5-200	SE264336.009	%	60 - 130%	117

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

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

VOC's in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH5-400	SE264336.010	%	60 - 130%	103
	BH6-200	SE264336.011	%	60 - 130%	102
	BH6-500	SE264336.012	%	60 - 130%	101
	BH7-200	SE264336.013	%	60 - 130%	125
	BH7-400	SE264336.014	%	60 - 130%	104
	BH8-200	SE264336.015	%	60 - 130%	103
	BH8-600	SE264336.016	%	60 - 130%	132 Ⓢ
	BH9-400	SE264336.017	%	60 - 130%	101
	BH9-600	SE264336.018	%	60 - 130%	111
	BH10-300	SE264336.019	%	60 - 130%	98
	BH10-500	SE264336.020	%	60 - 130%	120
	BH11-300	SE264336.021	%	60 - 130%	109
	BH11-500	SE264336.022	%	60 - 130%	118
	BH12-300	SE264336.023	%	60 - 130%	115
	BH12-500	SE264336.024	%	60 - 130%	122
	BH13-300	SE264336.025	%	60 - 130%	113
	BH13-600	SE264336.026	%	60 - 130%	119
	BH13-800	SE264336.027	%	60 - 130%	110
	HS1	SE264336.030	%	60 - 130%	103
d4-1,2-dichloroethane (Surrogate)	BH1-300	SE264336.001	%	60 - 130%	64
	BH1-800	SE264336.002	%	60 - 130%	89
	BH2-300	SE264336.003	%	60 - 130%	93
	BH2-500	SE264336.004	%	60 - 130%	85
	BH3-300	SE264336.005	%	60 - 130%	86
	BH3-600	SE264336.006	%	60 - 130%	77
	BH4-300	SE264336.007	%	60 - 130%	87
	BH4-500	SE264336.008	%	60 - 130%	77
	BH5-200	SE264336.009	%	60 - 130%	96
	BH5-400	SE264336.010	%	60 - 130%	84
	BH6-200	SE264336.011	%	60 - 130%	95
	BH6-500	SE264336.012	%	60 - 130%	91
	BH7-200	SE264336.013	%	60 - 130%	108
	BH7-400	SE264336.014	%	60 - 130%	95
	BH8-200	SE264336.015	%	60 - 130%	87
	BH8-600	SE264336.016	%	60 - 130%	97
	BH9-400	SE264336.017	%	60 - 130%	81
	BH9-600	SE264336.018	%	60 - 130%	79
	BH10-300	SE264336.019	%	60 - 130%	74
	BH10-500	SE264336.020	%	60 - 130%	92
	BH11-300	SE264336.021	%	60 - 130%	90
	BH11-500	SE264336.022	%	60 - 130%	93
	BH12-300	SE264336.023	%	60 - 130%	100
	BH12-500	SE264336.024	%	60 - 130%	100
	BH13-300	SE264336.025	%	60 - 130%	96
	BH13-600	SE264336.026	%	60 - 130%	98
	BH13-800	SE264336.027	%	60 - 130%	84
	HS1	SE264336.030	%	60 - 130%	82
d8-toluene (Surrogate)	BH1-300	SE264336.001	%	60 - 130%	70
	BH1-800	SE264336.002	%	60 - 130%	114
	BH2-300	SE264336.003	%	60 - 130%	119
	BH2-500	SE264336.004	%	60 - 130%	106
	BH3-300	SE264336.005	%	60 - 130%	114
	BH3-600	SE264336.006	%	60 - 130%	94
	BH4-300	SE264336.007	%	60 - 130%	112
	BH4-500	SE264336.008	%	60 - 130%	109
	BH5-200	SE264336.009	%	60 - 130%	131 Ⓢ
	BH5-400	SE264336.010	%	60 - 130%	111
	BH6-200	SE264336.011	%	60 - 130%	110
	BH6-500	SE264336.012	%	60 - 130%	107
	BH7-200	SE264336.013	%	60 - 130%	121
	BH7-400	SE264336.014	%	60 - 130%	113

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

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

VOC's in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	BH8-200	SE264336.015	%	60 - 130%	110
	BH8-600	SE264336.016	%	60 - 130%	126
	BH9-400	SE264336.017	%	60 - 130%	112
	BH9-600	SE264336.018	%	60 - 130%	110
	BH10-300	SE264336.019	%	60 - 130%	101
	BH10-500	SE264336.020	%	60 - 130%	131 Ⓢ
	BH11-300	SE264336.021	%	60 - 130%	114
	BH11-500	SE264336.022	%	60 - 130%	119
	BH12-300	SE264336.023	%	60 - 130%	129
	BH12-500	SE264336.024	%	60 - 130%	135 Ⓢ
	BH13-300	SE264336.025	%	60 - 130%	126
	BH13-600	SE264336.026	%	60 - 130%	122
	BH13-800	SE264336.027	%	60 - 130%	124
	HS1	SE264336.030	%	60 - 130%	118

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1-300	SE264336.001	%	60 - 130%	85
	BH1-800	SE264336.002	%	60 - 130%	112
	BH2-300	SE264336.003	%	60 - 130%	119
	BH2-500	SE264336.004	%	60 - 130%	107
	BH3-300	SE264336.005	%	60 - 130%	105
	BH3-600	SE264336.006	%	60 - 130%	97
	BH4-300	SE264336.007	%	60 - 130%	102
	BH4-500	SE264336.008	%	60 - 130%	103
	BH5-200	SE264336.009	%	60 - 130%	117
	BH5-400	SE264336.010	%	60 - 130%	103
	BH6-200	SE264336.011	%	60 - 130%	102
	BH6-500	SE264336.012	%	60 - 130%	101
	BH7-200	SE264336.013	%	60 - 130%	125
	BH7-400	SE264336.014	%	60 - 130%	104
	BH8-200	SE264336.015	%	60 - 130%	103
	BH8-600	SE264336.016	%	60 - 130%	132 Ⓢ
	BH9-400	SE264336.017	%	60 - 130%	101
	BH9-600	SE264336.018	%	60 - 130%	111
	BH10-300	SE264336.019	%	60 - 130%	98
	BH10-500	SE264336.020	%	60 - 130%	120
	BH11-300	SE264336.021	%	60 - 130%	109
	BH11-500	SE264336.022	%	60 - 130%	118
	BH12-300	SE264336.023	%	60 - 130%	115
	BH12-500	SE264336.024	%	60 - 130%	122
	BH13-300	SE264336.025	%	60 - 130%	113
	BH13-600	SE264336.026	%	60 - 130%	119
	BH13-800	SE264336.027	%	60 - 130%	110
	HS1	SE264336.030	%	60 - 130%	103
d4-1,2-dichloroethane (Surrogate)	BH1-300	SE264336.001	%	60 - 130%	64
	BH1-800	SE264336.002	%	60 - 130%	89
	BH2-300	SE264336.003	%	60 - 130%	93
	BH2-500	SE264336.004	%	60 - 130%	85
	BH3-300	SE264336.005	%	60 - 130%	86
	BH3-600	SE264336.006	%	60 - 130%	77
	BH4-300	SE264336.007	%	60 - 130%	87
	BH4-500	SE264336.008	%	60 - 130%	77
	BH5-200	SE264336.009	%	60 - 130%	96
	BH5-400	SE264336.010	%	60 - 130%	84
	BH6-200	SE264336.011	%	60 - 130%	95
	BH6-500	SE264336.012	%	60 - 130%	91
	BH7-200	SE264336.013	%	60 - 130%	108
	BH7-400	SE264336.014	%	60 - 130%	95
	BH8-200	SE264336.015	%	60 - 130%	87
	BH8-600	SE264336.016	%	60 - 130%	97

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

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

Volatile Petroleum Hydrocarbons in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d4-1,2-dichloroethane (Surrogate)	BH9-400	SE264336.017	%	60 - 130%	81
	BH9-600	SE264336.018	%	60 - 130%	79
	BH10-300	SE264336.019	%	60 - 130%	74
	BH10-500	SE264336.020	%	60 - 130%	92
	BH11-300	SE264336.021	%	60 - 130%	90
	BH11-500	SE264336.022	%	60 - 130%	93
	BH12-300	SE264336.023	%	60 - 130%	100
	BH12-500	SE264336.024	%	60 - 130%	100
	BH13-300	SE264336.025	%	60 - 130%	96
	BH13-600	SE264336.026	%	60 - 130%	98
	BH13-800	SE264336.027	%	60 - 130%	84
	HS1	SE264336.030	%	60 - 130%	82
d8-toluene (Surrogate)	BH1-300	SE264336.001	%	60 - 130%	70
	BH1-800	SE264336.002	%	60 - 130%	114
	BH2-300	SE264336.003	%	60 - 130%	119
	BH2-500	SE264336.004	%	60 - 130%	106
	BH3-300	SE264336.005	%	60 - 130%	114
	BH3-600	SE264336.006	%	60 - 130%	94
	BH4-300	SE264336.007	%	60 - 130%	112
	BH4-500	SE264336.008	%	60 - 130%	109
	BH5-200	SE264336.009	%	60 - 130%	131 ☹
	BH5-400	SE264336.010	%	60 - 130%	111
	BH6-200	SE264336.011	%	60 - 130%	110
	BH6-500	SE264336.012	%	60 - 130%	107
	BH7-200	SE264336.013	%	60 - 130%	121
	BH7-400	SE264336.014	%	60 - 130%	113
	BH8-200	SE264336.015	%	60 - 130%	110
	BH8-600	SE264336.016	%	60 - 130%	126
	BH9-400	SE264336.017	%	60 - 130%	112
	BH9-600	SE264336.018	%	60 - 130%	110
	BH10-300	SE264336.019	%	60 - 130%	101
	BH10-500	SE264336.020	%	60 - 130%	131 ☹
	BH11-300	SE264336.021	%	60 - 130%	114
	BH11-500	SE264336.022	%	60 - 130%	119
	BH12-300	SE264336.023	%	60 - 130%	129
	BH12-500	SE264336.024	%	60 - 130%	135 ☹
	BH13-300	SE264336.025	%	60 - 130%	126
	BH13-600	SE264336.026	%	60 - 130%	122
	BH13-800	SE264336.027	%	60 - 130%	124
	HS1	SE264336.030	%	60 - 130%	118

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)-ENVJAN312

Sample Number	Parameter	Units	LOR	Result
LB310903.001	Mercury	mg/kg	0.05	<0.05
LB310934.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-ENVJAN420

Sample Number	Parameter	Units	LOR	Result
LB310900.001	Alpha BHC	mg/kg	0.1	<0.1
	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
	Beta BHC	mg/kg	0.1	<0.1
	Lindane (gamma BHC)	mg/kg	0.1	<0.1
	Delta BHC	mg/kg	0.1	<0.1
	Heptachlor	mg/kg	0.1	<0.1
	Aldrin	mg/kg	0.1	<0.1
	Isodrin	mg/kg	0.1	<0.1
	Heptachlor epoxide	mg/kg	0.1	<0.1
	Gamma Chlordane	mg/kg	0.1	<0.1
	Alpha Chlordane	mg/kg	0.1	<0.1
	Alpha Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDE	mg/kg	0.1	<0.1
	Dieldrin	mg/kg	0.2	<0.2
	Endrin	mg/kg	0.2	<0.2
	Beta Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDD	mg/kg	0.1	<0.1
	Endrin aldehyde	mg/kg	0.1	<0.1
	Endosulfan sulphate	mg/kg	0.1	<0.1
	p,p'-DDT	mg/kg	0.1	<0.1
Surrogates	Endrin ketone	mg/kg	0.1	<0.1
	Methoxychlor	mg/kg	0.1	<0.1
LB310932.001	Mirex	mg/kg	0.1	<0.1
	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	97
	Alpha BHC	mg/kg	0.1	<0.1
	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
	Beta BHC	mg/kg	0.1	<0.1
	Lindane (gamma BHC)	mg/kg	0.1	<0.1
	Delta BHC	mg/kg	0.1	<0.1
	Heptachlor	mg/kg	0.1	<0.1
	Aldrin	mg/kg	0.1	<0.1
	Isodrin	mg/kg	0.1	<0.1
	Heptachlor epoxide	mg/kg	0.1	<0.1
	Gamma Chlordane	mg/kg	0.1	<0.1
	Alpha Chlordane	mg/kg	0.1	<0.1
	Alpha Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDE	mg/kg	0.1	<0.1
	Dieldrin	mg/kg	0.2	<0.2
	Endrin	mg/kg	0.2	<0.2
	Beta Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDD	mg/kg	0.1	<0.1
	Endrin aldehyde	mg/kg	0.1	<0.1
Surrogates	Endosulfan sulphate	mg/kg	0.1	<0.1
	p,p'-DDT	mg/kg	0.1	<0.1
	Endrin ketone	mg/kg	0.1	<0.1
	Methoxychlor	mg/kg	0.1	<0.1
	Mirex	mg/kg	0.1	<0.1
	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	113

OP Pesticides in Soil

Method: ME-(AU)-ENVJAN420

Sample Number	Parameter	Units	LOR	Result
LB310900.001	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Bromophos Ethyl	mg/kg	0.2	<0.2
	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
	Diazinon (Dimpylate)	mg/kg	0.5	<0.5
	Dichlorvos	mg/kg	0.5	<0.5

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

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

OP Pesticides in Soil (continued)

Method: ME-(AU)-ENVJAN420

Sample Number	Parameter	Units	LOR	Result
LB310900.001	Dimethoate	mg/kg	0.5	<0.5
	Ethion	mg/kg	0.2	<0.2
	Fenitrothion	mg/kg	0.2	<0.2
	Malathion	mg/kg	0.2	<0.2
	Methidathion	mg/kg	0.5	<0.5
	Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	2-fluorobiphenyl (Surrogate)	%	-	81
	d14-p-terphenyl (Surrogate)	%	-	91
LB310932.001	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Bromophos Ethyl	mg/kg	0.2	<0.2
	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
	Diazinon (Dimpylate)	mg/kg	0.5	<0.5
	Dichlorvos	mg/kg	0.5	<0.5
	Dimethoate	mg/kg	0.5	<0.5
	Ethion	mg/kg	0.2	<0.2
	Fenitrothion	mg/kg	0.2	<0.2
	Malathion	mg/kg	0.2	<0.2
	Methidathion	mg/kg	0.5	<0.5
	Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	2-fluorobiphenyl (Surrogate)	%	-	94
	d14-p-terphenyl (Surrogate)	%	-	106

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN420

Sample Number	Parameter	Units	LOR	Result
LB310900.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
	Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
	Benzo(ghi)perylene	mg/kg	0.1	<0.1
	Total PAH (18)	mg/kg	0.8	<0.8
	d5-nitrobenzene (Surrogate)	%	-	89
	2-fluorobiphenyl (Surrogate)	%	-	81
	d14-p-terphenyl (Surrogate)	%	-	91
LB310932.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
	Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
	Benzo(ghi)perylene	mg/kg	0.1	<0.1
	Total PAH (18)	mg/kg	0.8	<0.8

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
LB310932.001	Surrogates	d5-nitrobenzene (Surrogate)	%	-	98
		2-fluorobiphenyl (Surrogate)	%	-	94
		d14-p-terphenyl (Surrogate)	%	-	106

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

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

Sample Number		Parameter	Units	LOR	Result
LB310902.001		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
LB310925.001		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
LB310900.001		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
LB310932.001		TRH C10-C14	mg/kg	20	<20
		TRH C15-C28	mg/kg	45	<45
		TRH C29-C36	mg/kg	45	<45
		TRH C37-C40	mg/kg	100	<100
		TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB310901.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	81
		d8-toluene (Surrogate)	%	-	98
		Bromofluorobenzene (Surrogate)	%	-	105
	Totals	Total BTEX*	mg/kg	0.6	<0.6
LB310933.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	103
		d8-toluene (Surrogate)	%	-	95
		Bromofluorobenzene (Surrogate)	%	-	96
	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
LB310901.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	81
LB310933.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	103

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

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

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

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

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Mercury in Soil

Method: ME-(AU)-ENVJAN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE264330.001	LB310934.020	Mercury	mg/kg	0.05	<0.05	<0.05	176	0
SE264336.010	LB310903.014	Mercury	mg/kg	0.05	<0.05	<0.05	169	0
SE264336.019	LB310903.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE264336.029	LB310934.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content

Method: ME-(AU)-ENVJAN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE264330.001	LB310935.026	% Moisture	%w/w	1	19.4	17.8	35	9
SE264335.002	LB310935.022	% Moisture	%w/w	1	6.0	5.5	47	8
SE264336.010	LB310904.011	% Moisture	%w/w	1	22.6	22.6	34	0
SE264336.019	LB310904.021	% Moisture	%w/w	1	14.5	17.9	36	21
SE264336.022	LB310935.011	% Moisture	%w/w	1	17.5	17.7	36	1

OC Pesticides in Soil

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE264336.010	LB310900.014	Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
		Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
		Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
		o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
		Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
		Endrin	mg/kg	0.2	<0.2	<0.2	200	0
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
		o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
		o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
		Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
		Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
		Total OC VIC EPA	mg/kg	1	<1	<1	200	0
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	30	2
SE264336.019	LB310900.024	Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
		Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
		Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
		o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
		Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
		Endrin	mg/kg	0.2	<0.2	<0.2	200	0
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0

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

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

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

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

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

OC Pesticides in Soil (continued)

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %			
SE264336.019	LB310900.024	o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0			
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0			
		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0			
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0			
		o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0			
		p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0			
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0			
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0			
		Mirex	mg/kg	0.1	<0.1	<0.1	200	0			
		trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0			
		Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0			
		Total OC VIC EPA	mg/kg	1	<1	<1	200	0			
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)		mg/kg	-	0.15	0.15	30	0		
SE264336.027	LB310932.026	Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0			
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0			
		Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0			
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0			
		Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0			
		Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0			
		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0			
		Isodrin	mg/kg	0.1	<0.1	<0.1	200	0			
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0			
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0			
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0			
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0			
		o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0			
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0			
		Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0			
		Endrin	mg/kg	0.2	<0.2	<0.2	200	0			
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0			
		o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0			
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0			
		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0			
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0			
		o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0			
		p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0			
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0			
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0			
		Mirex	mg/kg	0.1	<0.1	<0.1	200	0			
		trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0			
		Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0			
		Total OC VIC EPA	mg/kg	1	<1	<1	200	0			
			Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)		mg/kg	-	0.14	0.14	30	1

OP Pesticides in Soil

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE264336.010	LB310900.014	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
		Ethion	mg/kg	0.2	<0.2	<0.2	200	0
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
		Malathion	mg/kg	0.2	<0.2	<0.2	200	0
		Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
		Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	4
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE264336.019	LB310900.024	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0

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

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

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

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

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

OP Pesticides in Soil (continued)

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE264336.019	LB310900.024	Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
		Ethion	mg/kg	0.2	<0.2	<0.2	200	0
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
		Malathion	mg/kg	0.2	<0.2	<0.2	200	0
		Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
		Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	6
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	30	5
SE264336.025	LB310932.014	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
		Ethion	mg/kg	0.2	<0.2	<0.2	200	0
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
		Malathion	mg/kg	0.2	<0.2	<0.2	200	0
		Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
		Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	5
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	13
SE264336.027	LB310932.025	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	0	200	0
		Bromophos Ethyl	mg/kg	0.2	<0.2	0	200	0
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	0.0009400233	200	0
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	0.0255357340	200	0
		Dichlorvos	mg/kg	0.5	<0.5	0.0001530074	200	0
		Dimethoate	mg/kg	0.5	<0.5	0.0027409859	200	0
		Ethion	mg/kg	0.2	<0.2	0	200	0
		Fenitrothion	mg/kg	0.2	<0.2	0.0012214212	200	0
		Malathion	mg/kg	0.2	<0.2	0.0090646852	200	0
		Methidathion	mg/kg	0.5	<0.5	0	200	0
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	0	200	0
		Total OP Pesticides*	mg/kg	1.7	<1.7	0	200	0
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4362442894	30	10
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5387084114	30	4

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE264336.010	LB310900.014	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0

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

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

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

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

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE264336.010	LB310900.014	Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
		Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	1
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	4
SE264336.019	LB310900.024	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
		Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	3
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	6
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	30	5
SE264336.025	LB310932.014	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
		Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.4	30	7
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	5
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	13
SE264336.027	LB310932.025	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

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

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

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

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

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE264336.027	LB310932.025	Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
		Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates						
		d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.4	30	13
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	10
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	30	4

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 %
SE264330.001	LB310925.021	Arsenic, As	mg/kg	1	6	6	46	3
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	15	15	33	0
		Copper, Cu	mg/kg	0.5	7.1	8.3	36	15
		Nickel, Ni	mg/kg	0.5	2.2	2.2	53	2
		Lead, Pb	mg/kg	1	17	20	35	15
		Zinc, Zn	mg/kg	2	14	21	41	40
SE264336.010	LB310902.014	Arsenic, As	mg/kg	1	4	3	60	16
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	22	18	33	19
		Copper, Cu	mg/kg	0.5	16	15	33	2
		Nickel, Ni	mg/kg	0.5	13	14	34	11
		Lead, Pb	mg/kg	1	17	15	36	9
		Zinc, Zn	mg/kg	2	52	48	34	9
SE264336.019	LB310902.024	Arsenic, As	mg/kg	1	3	3	64	3
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	14	13	34	6
		Copper, Cu	mg/kg	0.5	12	12	34	0
		Nickel, Ni	mg/kg	0.5	8.8	10	35	12
		Lead, Pb	mg/kg	1	7	7	44	3
		Zinc, Zn	mg/kg	2	37	30	36	21
SE264336.029	LB310925.014	Arsenic, As	mg/kg	1	2	1	89	31
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	12	9.3	35	28
		Copper, Cu	mg/kg	0.5	11	8.4	35	27
		Nickel, Ni	mg/kg	0.5	11	8.6	35	24
		Lead, Pb	mg/kg	1	7	6	45	28
		Zinc, Zn	mg/kg	2	18	13	43	34

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE264336.010	LB310900.014	TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	45	<45	<45	200	0
		TRH C29-C36	mg/kg	45	<45	<45	200	0
		TRH C37-C40	mg/kg	100	<100	<100	200	0
		TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0

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

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

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

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

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-ENVJAN403

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE264336.010	LB310900.014	TRH F Bands	TRH >C10-C16	mg/kg	25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	200	0
SE264336.019	LB310900.024		TRH C10-C14	mg/kg	20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	200	0
			TRH C10-C14	mg/kg	20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	200	0
SE264336.025	LB310932.014		TRH C29-C36	mg/kg	45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	200	0
SE264336.027	LB310932.025		TRH C10-C14	mg/kg	20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	200	0

VOC's in Soil

Method: ME-(AU)-ENVJAN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE264330.001	LB310933.021	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200
		Ethylbenzene		mg/kg	0.1	<0.1	<0.1	200	0
		m/p-xylene		mg/kg	0.2	<0.2	<0.2	200	0
		o-xylene		mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic		Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.6	7.6	50	1
			d8-toluene (Surrogate)	mg/kg	-	11.1	11.6	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.0	10.6	50	6
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE264336.010	LB310901.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200
		Ethylbenzene		mg/kg	0.1	<0.1	<0.1	200	0
		m/p-xylene		mg/kg	0.2	<0.2	<0.2	200	0
		o-xylene		mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic		Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.4	9.5	50	12
			d8-toluene (Surrogate)	mg/kg	-	11.1	11.0	50	0
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.3	12.3	50	17
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE264336.019	LB310901.024	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0

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

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

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

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

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

VOC's in Soil (continued)

Method: ME-(AU)-ENVJAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE264336.019	LB310901.024	Monocyclic	Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0	
			Aromatic	m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
				o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0	
			Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.4	9.3	50	23
		d8-toluene (Surrogate)		mg/kg	-	10.1	11.9	50	16	
		Bromofluorobenzene (Surrogate)		mg/kg	-	9.8	11.6	50	17	
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0	
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0	
		SE264336.026	LB310933.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200
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 (VOC)*			mg/kg	0.1	<0.1	<0.1	200	0	
Surrogates	d4-1,2-dichloroethane (Surrogate)			mg/kg	-	9.8	9.1	50	8	
	d8-toluene (Surrogate)			mg/kg	-	12.2	12.2	50	0	
	Bromofluorobenzene (Surrogate)			mg/kg	-	11.9	11.2	50	6	
Totals	Total BTEX*			mg/kg	0.6	<0.6	<0.6	200	0	
	Total Xylenes*			mg/kg	0.3	<0.3	<0.3	200	0	

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-ENVJAN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE264330.001	LB310933.021	TRH C6-C10	mg/kg	25	<25	<25	200	0	
		TRH C6-C9	mg/kg	20	<20	<20	200	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.6	7.6	50	1
			d8-toluene (Surrogate)	mg/kg	-	11.1	11.6	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.0	10.6	50	6
		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
SE264336.010	LB310901.014	TRH C6-C10	mg/kg	25	<25	<25	200	0	
		TRH C6-C9	mg/kg	20	<20	<20	200	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.4	9.5	50	12
			d8-toluene (Surrogate)	mg/kg	-	11.1	11.0	50	0
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.3	12.3	50	17
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE264336.019	LB310901.024	TRH C6-C10	mg/kg	25	<25	<25	200	0	
		TRH C6-C9	mg/kg	20	<20	<20	200	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.4	9.3	50	23
			d8-toluene (Surrogate)	mg/kg	-	10.1	11.9	50	16
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.8	11.6	50	17
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE264336.026	LB310933.014	TRH C6-C10	mg/kg	25	<25	<25	200	0	
		TRH C6-C9	mg/kg	20	<20	<20	200	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.8	9.1	50	8
			d8-toluene (Surrogate)	mg/kg	-	12.2	12.2	50	0
			Bromofluorobenzene (Surrogate)	mg/kg	-	11.9	11.2	50	6
		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 %
LB310903.002	Mercury	mg/kg	0.05	0.20	0.2	80 - 120	102
LB310934.002	Mercury	mg/kg	0.05	0.19	0.2	80 - 120	96

OC Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB310900.002	Delta BHC	mg/kg	0.1	0.1	0.2	60 - 140	66
	Heptachlor	mg/kg	0.1	0.1	0.2	60 - 140	67
	Aldrin	mg/kg	0.1	0.1	0.2	60 - 140	67
	Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	63
	Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	68
	p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	80
LB310932.002	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	-	0.14	0.15	40 - 130	94
	Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	79
	Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	81
	Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	80
	Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	78
	Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	69
LB310932.002	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	-	0.16	0.15	40 - 130	104
	p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	79
	Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	69
	Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	78
	Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	80
	Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	81

OP Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB310900.002	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	90
	Diazinon (Dimpylate)	mg/kg	0.5	1.8	2	60 - 140	91
	Dichlorvos	mg/kg	0.5	1.8	2	60 - 140	88
	Ethion	mg/kg	0.2	1.6	2	60 - 140	78
	Surrogates	2-fluorobiphenyl (Surrogate)	-	0.5	0.5	40 - 130	99
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	105
LB310932.002	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.7	2	60 - 140	86
	Diazinon (Dimpylate)	mg/kg	0.5	2.0	2	60 - 140	100
	Dichlorvos	mg/kg	0.5	1.4	2	60 - 140	70
	Ethion	mg/kg	0.2	1.8	2	60 - 140	90
	Surrogates	2-fluorobiphenyl (Surrogate)	-	0.5	0.5	40 - 130	95
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	40 - 130	115

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB310900.002	Naphthalene	mg/kg	0.1	4.7	4	60 - 140	118
	Acenaphthylene	mg/kg	0.1	4.6	4	60 - 140	114
	Acenaphthene	mg/kg	0.1	4.9	4	60 - 140	121
	Phenanthrene	mg/kg	0.1	4.9	4	60 - 140	122
	Anthracene	mg/kg	0.1	5.0	4	60 - 140	125
	Fluoranthene	mg/kg	0.1	5.0	4	60 - 140	126
	Pyrene	mg/kg	0.1	4.8	4	60 - 140	119
	Benzo(a)pyrene	mg/kg	0.1	4.6	4	60 - 140	116
	Surrogates	d5-nitrobenzene (Surrogate)	-	0.6	0.5	40 - 130	110
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	99
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	105
LB310932.002	Naphthalene	mg/kg	0.1	4.2	4	60 - 140	106
	Acenaphthylene	mg/kg	0.1	4.3	4	60 - 140	106
	Acenaphthene	mg/kg	0.1	4.4	4	60 - 140	111
	Phenanthrene	mg/kg	0.1	4.3	4	60 - 140	108
	Anthracene	mg/kg	0.1	4.4	4	60 - 140	109
	Fluoranthene	mg/kg	0.1	4.3	4	60 - 140	108
	Pyrene	mg/kg	0.1	5.0	4	60 - 140	126
	Benzo(a)pyrene	mg/kg	0.1	4.6	4	60 - 140	116
	Surrogates	d5-nitrobenzene (Surrogate)	-	0.5	0.5	40 - 130	97
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	95
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	40 - 130	115

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

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

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

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

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

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB310902.002	Arsenic, As	mg/kg	1	310	318.22	80 - 120	97
	Cadmium, Cd	mg/kg	0.3	4.9	4.81	70 - 130	102
	Chromium, Cr	mg/kg	0.5	39	38.31	80 - 120	103
	Copper, Cu	mg/kg	0.5	290	290	80 - 120	101
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	94
	Lead, Pb	mg/kg	1	87	89.9	80 - 120	97
	Zinc, Zn	mg/kg	2	260	273	80 - 120	96
LB310925.002	Arsenic, As	mg/kg	1	300	318.22	80 - 120	95
	Cadmium, Cd	mg/kg	0.3	4.7	4.81	70 - 130	97
	Chromium, Cr	mg/kg	0.5	38	38.31	80 - 120	100
	Copper, Cu	mg/kg	0.5	280	290	80 - 120	98
	Nickel, Ni	mg/kg	0.5	170	187	80 - 120	92
	Lead, Pb	mg/kg	1	85	89.9	80 - 120	95
	Zinc, Zn	mg/kg	2	260	273	80 - 120	94

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB310900.002	TRH C10-C14	mg/kg	20	42	40	60 - 140	106
	TRH C15-C28	mg/kg	45	<45	40	60 - 140	100
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	88
	TRH F Bands						
	TRH >C10-C16	mg/kg	25	42	40	60 - 140	106
	TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	94
LB310932.002	TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	89
	TRH C10-C14	mg/kg	20	51	40	60 - 140	126
	TRH C15-C28	mg/kg	45	48	40	60 - 140	121
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	94
	TRH F Bands						
	TRH >C10-C16	mg/kg	25	50	40	60 - 140	126
	TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	113
	TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	83

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB310901.002	Monocyclic	Benzene	mg/kg	0.1	5.0	5	60 - 140	100
		Aromatic	Toluene	mg/kg	0.1	4.3	5	60 - 140
	Surrogates	Ethylbenzene	mg/kg	0.1	4.3	5	60 - 140	87
		m/p-xylene	mg/kg	0.2	8.6	10	60 - 140	86
		o-xylene	mg/kg	0.1	4.3	5	60 - 140	86
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.4	10	70 - 130	84
		d8-toluene (Surrogate)	mg/kg	-	10.3	10	70 - 130	103
		Bromofluorobenzene (Surrogate)	mg/kg	-	11.5	10	70 - 130	115
LB310933.002	Monocyclic	Benzene	mg/kg	0.1	5.2	5	60 - 140	103
		Aromatic	Toluene	mg/kg	0.1	4.6	5	60 - 140
	Surrogates	Ethylbenzene	mg/kg	0.1	4.8	5	60 - 140	96
		m/p-xylene	mg/kg	0.2	9.6	10	60 - 140	96
		o-xylene	mg/kg	0.1	4.8	5	60 - 140	96
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.3	10	70 - 130	93
		d8-toluene (Surrogate)	mg/kg	-	11.6	10	70 - 130	116
		Bromofluorobenzene (Surrogate)	mg/kg	-	11.9	10	70 - 130	119

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB310901.002	TRH C6-C10	mg/kg	25	85	92.5	60 - 140	92
	TRH C6-C9	mg/kg	20	74	80	60 - 140	93
	Surrogates						
	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.4	10	70 - 130	84
	Bromofluorobenzene (Surrogate)	mg/kg	-	11.5	10	70 - 130	115
LB310933.002	VPH F Bands						
	TRH C6-C10 minus BTEX (F1)	mg/kg	25	58	62.5	60 - 140	93
	TRH C6-C10	mg/kg	25	85	92.5	60 - 140	92
	TRH C6-C9	mg/kg	20	74	80	60 - 140	92
	Surrogates						
	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.3	10	70 - 130	93
	Bromofluorobenzene (Surrogate)	mg/kg	-	11.9	10	70 - 130	119
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 identifier 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%
SE264336.020	LB310934.004	Mercury	mg/kg	0.05	0.23	<0.05	0.2	112

OC Pesticides in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE264336.001	LB310900.004	Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
		Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
		Delta BHC	mg/kg	0.1	0.1	<0.1	0.2	70
		Heptachlor	mg/kg	0.1	0.1	<0.1	0.2	71
		Aldrin	mg/kg	0.1	0.1	<0.1	0.2	71
		Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
		o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
		Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	71
		Endrin	mg/kg	0.2	<0.2	<0.2	0.2	69
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
		o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
		o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	87
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
		Mirex	mg/kg	0.1	<0.1	<0.1	-	-
		trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
		Total CLP OC Pesticides	mg/kg	1	<1	<1	-	-
		Total OC VIC EPA	mg/kg	1	<1	<1	-	-
SE264336.020	LB310932.024	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.14	94
		Alpha BHC	mg/kg	0.1	6.53900054447	<0.1	-	-
		Hexachlorobenzene (HCB)	mg/kg	0.1	0.01844542710	<0.1	-	-
		Beta BHC	mg/kg	0.1	0.00076792107	<0.1	-	-
		Lindane (gamma BHC)	mg/kg	0.1	6.71982730195	<0.1	-	-
		Delta BHC	mg/kg	0.1	0.17339156358	<0.1	0.2	87
		Heptachlor	mg/kg	0.1	0.17147336770	<0.1	0.2	86
		Aldrin	mg/kg	0.1	0.18386677247	<0.1	0.2	92
		Isodrin	mg/kg	0.1	0.00759552615	<0.1	-	-
		Heptachlor epoxide	mg/kg	0.1	4.86012601243	<0.1	-	-
		Gamma Chlordane	mg/kg	0.1	0.00539978336	<0.1	-	-
		Alpha Chlordane	mg/kg	0.1	4.85256970124	<0.1	-	-
		Alpha Endosulfan	mg/kg	0.2	5.33822799316	<0.2	-	-
		o,p'-DDE*	mg/kg	0.1	0.00015013583	<0.1	-	-
		p,p'-DDE	mg/kg	0.1	0.00017791783	<0.1	-	-
		Dieldrin	mg/kg	0.2	0.17317865064	<0.2	0.2	85
		Endrin	mg/kg	0.2	0.16187772375	<0.2	0.2	81
		Beta Endosulfan	mg/kg	0.2	0.02781126826	<0.2	-	-
		o,p'-DDD*	mg/kg	0.1	0	<0.1	-	-
		p,p'-DDD	mg/kg	0.1	0.02682125385	<0.1	-	-
		Endrin aldehyde	mg/kg	0.1	0.00035016024	<0.1	-	-
		Endosulfan sulphate	mg/kg	0.1	0.00291200770	<0.1	-	-
		o,p'-DDT*	mg/kg	0.1	0.03418375715	<0.1	-	-
		p,p'-DDT	mg/kg	0.1	0.1306	<0.1	0.2	65
		Endrin ketone	mg/kg	0.1	0.01115766744	<0.1	-	-
		Methoxychlor	mg/kg	0.1	0	<0.1	-	-

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

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

OC Pesticides in Soil (continued)

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%	
SE264336.020	LB310932.024	Mirex	mg/kg	0.1	0.00487738030	<0.1	-	-	
		trans-Nonachlor	mg/kg	0.1	0.00542489269	<0.1	-	-	
		Total CLP OC Pesticides	mg/kg	1	0.99438807816	<1	-	-	
		Total OC VIC EPA	mg/kg	1	0.99438807816	<1	-	-	
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mol/kg	-	0.17371855305	0.18	-	116

OP Pesticides in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%	
SE264336.001	LB310900.004	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-	
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-	
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.1	<0.2	2	103	
		Diazinon (Dimpylate)	mg/kg	0.5	2.2	<0.5	2	108	
		Dichlorvos	mg/kg	0.5	2.0	<0.5	2	100	
		Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-	
		Ethion	mg/kg	0.2	2.2	<0.2	2	111	
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-	
		Malathion	mg/kg	0.2	<0.2	<0.2	-	-	
		Methidathion	mg/kg	0.5	<0.5	<0.5	-	-	
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-	
		Total OP Pesticides*	mg/kg	1.7	8.5	<1.7	-	-	
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	101
d14-p-terphenyl (Surrogate)	mg/kg		-	0.6	0.6	-	117		
SE264336.020	LB310932.024	Azinphos-methyl (Guthion)	mg/kg	0.2	0	<0.2	-	-	
		Bromophos Ethyl	mg/kg	0.2	8.37520587354	<0.2	-	-	
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.65437965675	<0.2	2	83	
		Diazinon (Dimpylate)	mg/kg	0.5	1.91333726951	<0.5	2	96	
		Dichlorvos	mg/kg	0.5	0.93386457977	<0.5	2	62	
		Dimethoate	mg/kg	0.5	0.00422832697	<0.5	-	-	
		Ethion	mg/kg	0.2	1.59502449559	<0.2	2	80	
		Fenitrothion	mg/kg	0.2	0	<0.2	-	-	
		Malathion	mg/kg	0.2	0.06786521128	<0.2	-	-	
		Methidathion	mg/kg	0.5	0.00205099922	<0.5	-	-	
		Parathion-ethyl (Parathion)	mg/kg	0.2	0.01680723530	<0.2	-	-	
		Total OP Pesticides*	mg/kg	1.7	6.09660600164	<1.7	-	-	
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.46275324844	0.5	-	93
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.55306031286	0.6	-	111

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE264336.001	LB310900.004	Naphthalene	mg/kg	0.1	4.7	<0.1	4	116
		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	4.8	0.1	4	117
		Acenaphthene	mg/kg	0.1	4.7	<0.1	4	117
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	5.3	0.5	4	122
		Anthracene	mg/kg	0.1	4.9	0.2	4	120
		Fluoranthene	mg/kg	0.1	6.4	1.0	4	135
		Pyrene	mg/kg	0.1	6.1	1.1	4	126
		Benzo(a)anthracene	mg/kg	0.1	0.9	0.6	-	-
		Chrysene	mg/kg	0.1	1.0	0.8	-	-
		Benzo(b&j)fluoranthene	mg/kg	0.1	1.2	0.8	-	-
		Benzo(k)fluoranthene	mg/kg	0.1	0.6	0.4	-	-
		Benzo(a)pyrene	mg/kg	0.1	4.6	0.9	4	93
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.6	0.4	-	-
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(ghi)perylene	mg/kg	0.1	0.4	0.4	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	4.9	1.1	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	5.0	1.2	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	5.0	1.2	-	-
		Total PAH (18)	mg/kg	0.8	46	7.0	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE264336.001	LB310900.004	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	101
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.6	117
SE264336.020	LB310932.024		Naphthalene	mg/kg	0.1	3.92694417918	<0.1	4 98
			2-methylnaphthalene	mg/kg	0.1	0.00010368593	<0.1	-
			1-methylnaphthalene	mg/kg	0.1	0.05017048458	<0.1	-
			Acenaphthylene	mg/kg	0.1	4.04111252180	<0.1	4 101
			Acenaphthene	mg/kg	0.1	4.16654345745	<0.1	4 104
			Fluorene	mg/kg	0.1	0.00910655086	<0.1	-
			Phenanthrene	mg/kg	0.1	4.17764324198	<0.1	4 104
			Anthracene	mg/kg	0.1	4.15440427306	<0.1	4 104
			Fluoranthene	mg/kg	0.1	4.14088488224	<0.1	4 103
			Pyrene	mg/kg	0.1	4.69880987931	<0.1	4 117
			Benzo(a)anthracene	mg/kg	0.1	0.00479766481	<0.1	-
			Chrysene	mg/kg	0.1	0.00517939347	<0.1	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.00041606124	<0.1	-
			Benzo(k)fluoranthene	mg/kg	0.1	0.00040935827	<0.1	-
			Benzo(a)pyrene	mg/kg	0.1	4.37378084574	<0.1	4 109
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	6.24322387132	<0.1	-
			Dibenzo(ah)anthracene	mg/kg	0.1	5.68546593801	<0.1	-
			Benzo(ghi)perylene	mg/kg	0.1	6.77463292559	<0.1	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	4.37378084574	<0.2	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.44478084574	<0.2	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.51578084574	<0.3	-
			Total PAH (18)	mg/kg	0.8	33.68012328078	<0.8	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.46386301517	0.5	- 93
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.46275324844	0.5	- 93
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.55306031286	0.6	- 111

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%
SE264336.001	LB310902.004	Arsenic, As	mg/kg	1	52	6	50	93
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	88
		Chromium, Cr	mg/kg	0.5	65	19	50	92
		Copper, Cu	mg/kg	0.5	77	29	50	95
		Nickel, Ni	mg/kg	0.5	55	6.7	50	96
		Lead, Pb	mg/kg	1	140	120	50	40 ②
		Zinc, Zn	mg/kg	2	150	110	50	77
SE264336.020	LB310925.004	Arsenic, As	mg/kg	1	49	3	50	91
		Cadmium, Cd	mg/kg	0.3	42	<0.3	50	84
		Chromium, Cr	mg/kg	0.5	60	12	50	94
		Copper, Cu	mg/kg	0.5	60	10	50	99
		Nickel, Ni	mg/kg	0.5	54	9.5	50	90
		Lead, Pb	mg/kg	1	53	8	50	92
		Zinc, Zn	mg/kg	2	67	17	50	99

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE264336.001	LB310900.004	TRH C10-C14	mg/kg	20	51	<20	40	115
		TRH C15-C28	mg/kg	45	110	49	40	142 ②
		TRH C29-C36	mg/kg	45	79	<45	40	120
		TRH C37-C40	mg/kg	100	<100	<100	-	-
		TRH C10-C36 Total	mg/kg	110	240	<110	-	-
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH >C10-C16	mg/kg	25	53	<25	40	117
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	53	<25	-	-
		TRH >C16-C34 (F3)	mg/kg	90	130	<90	40	148 ②
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-
SE264336.020	LB310932.024	TRH C10-C14	mg/kg	20	49	<20	40	121
		TRH C15-C28	mg/kg	45	46	<45	40	111
		TRH C29-C36	mg/kg	45	<45	<45	40	87
		TRH C37-C40	mg/kg	100	<100	<100	-	-
		TRH C10-C36 Total	mg/kg	110	<110	<110	-	-

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

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE264336.020	LB310932.024	TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	mg/kg	25	49	<25	40	119
		Bands	mg/kg	25	49	<25	-	-
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	90	<90	<90	40	101
		TRH >C16-C34 (F3)	mg/kg	120	<120	<120	-	-
		TRH >C34-C40 (F4)	mg/kg					

VOC's in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE264336.001	LB310901.004	Monocyclic	Benzene	mg/kg	0.1	4.5	<0.1	5	90
			Aromatic	Toluene	mg/kg	0.1	4.8	<0.1	5
			Ethylbenzene	mg/kg	0.1	4.7	<0.1	5	93
			m/p-xylene	mg/kg	0.2	9.5	<0.2	10	95
			o-xylene	mg/kg	0.1	4.8	<0.1	5	95
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.2	6.4	10	122
			d8-toluene (Surrogate)	mg/kg	-	10.2	7.0	10	102
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.5	8.5	10	95
		Totals	Total BTEX*	mg/kg	0.6	28	<0.6	-	-
Total Xylenes*	mg/kg		0.3	14	<0.3	-	-		
SE264336.020	LB310933.023	Monocyclic	Benzene	mg/kg	0.1		<0.1	5	119
			Aromatic	Toluene	mg/kg	0.1		<0.1	5
			Ethylbenzene	mg/kg	0.1		<0.1	5	118
			m/p-xylene	mg/kg	0.2		<0.2	10	119
			o-xylene	mg/kg	0.1		<0.1	5	118
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1		<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-		9.2	10	87
			d8-toluene (Surrogate)	mg/kg	-		13.1	10	107
			Bromofluorobenzene (Surrogate)	mg/kg	-		12.0	10	117
		Totals	Total BTEX*	mg/kg	0.6		<0.6	-	-
Total Xylenes*	mg/kg		0.3		<0.3	-	-		

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE264336.001	LB310901.004	TRH C6-C10	mg/kg	25	76	<25	92.5	82
		TRH C6-C9	mg/kg	20	66	<20	80	82
		Surrogates						
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.2	6.4	10	122
		d8-toluene (Surrogate)	mg/kg	-	10.2	7.0	10	102
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.5	8.5	-	95
		VPH F	Benzene (F0)	mg/kg	0.1	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	62.5	76
SE264336.020	LB310933.023	TRH C6-C10	mg/kg	25		<25	92.5	97
		TRH C6-C9	mg/kg	20		<20	80	95
		Surrogates						
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-		9.2	10	87
		d8-toluene (Surrogate)	mg/kg	-		13.1	10	107
		Bromofluorobenzene (Surrogate)	mg/kg	-		12.0	-	117
		VPH F	Benzene (F0)	mg/kg	0.1	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	62.5	87

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

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

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

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

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here : https://www.sgs.com.au/~media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022_QA_QC_Plan.pdf

- * NATA accreditation does not cover the performance of this service .
- ** Indicative data, theoretical holding time exceeded.
- *** Indicates that both * and ** apply.
- Sample not analysed for this analyte.
- IS Insufficient sample for analysis.
- LNR Sample listed, but not received.
- LOR Limit of reporting.
- QFH QC result is above the upper tolerance.
- QFL QC result is below the lower tolerance.
- ① At least 2 of 3 surrogates are within acceptance criteria.
- ② RPD failed acceptance criteria due to sample heterogeneity.
- ③ Results less than 5 times LOR preclude acceptance criteria for RPD.
- ④ Recovery failed acceptance criteria due to matrix interference.
- ⑤ Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
- ⑥ LOR was raised due to sample matrix interference.
- ⑦ LOR was raised due to dilution of significantly high concentration of analyte in sample.
- ⑧ Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
- ⑨ Recovery failed acceptance criteria due to sample heterogeneity.
- ⑩ LOR was raised due to high conductivity of the sample (required dilution).
- † Refer to relevant report comments for further information.

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Chain of Custody Form – Ref 44202

Sheet 1 of 2

SGS EHS Sydney COC

SE264336



Ref: 44202 Investigator: Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800 Telephone: (02) 6361 4954 Facsimile: (02) 6360 3960 Email: fcanavez@barnson.com.au Contact Person: Felipe Canavez Invoice: mfrench@barnson.com.au			Sample matrix			Analysis								
Laboratory: SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015 Quotation #: Envir-IE-JUN23-1391652 Courier/CN: Grants Express						Water	Soil	Sludge	Cool	HNO3/H Cl	Unpre- served	SGS Method Code		
Sample ID	Container*	Sampling Date/Time							CL10	CL2T	SV3	Asbestos		
									8 Metals, TRH, BTEXN, PAH	8 Metals	OCP/OPP	Asbestos ID in soil		
1	BH1-300	2xA	24/04/2024		X		X		X		X	X		
2	BH1-800	2xA	24/04/2024		X		X		X		X	X		
3	BH2-300	A	24/04/2024		X		X		X		X	X		
4	BH2-500	2xA	24/04/2024		X		X		X		X	X		
5	BH3-300	2xA	24/04/2024		X		X		X		X	X		
6	BH3-600	2xA	24/04/2024		X		X		X		X	X		
7	BH4-300	2xA	24/04/2024		X		X		X		X	X		
8	BH4-500	2xA	24/04/2024		X		X		X		X	X		
9	BH5-200	2xA	24/04/2024		X		X		X		X	X		
10	BH5-400	2xA	24/04/2024		X		X		X		X	X		
11	BH6-200	2xA	24/04/2024		X		X		X		X	X		
12	BH6-500	2xA	24/04/2024		X		X		X		X	X		
13	BH7-200	2xA	24/04/2024		X		X		X		X	X		
14	BH7-400	2xA	24/04/2024		X		X		X		X	X		
15	BH8-200	2xA	24/04/2024		X		X		X		X	X		
16	BH8-600	2xA	24/04/2024		X		X		X		X	X		
17	BH9-400	2xA	24/04/2024		X		X		X		X	X		
18	BH9-600	2xA	24/04/2024		X		X		X		X	X		
Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.						Sampler name: Felipe Canavez Date: 24/04/2024 Time: 11:00								
Relinquished by: Martine French (print and signature)						Date: 24/04/2024 Time: 13:00		Received by: <i>M. Boun</i> (print and signature) <i>[Signature]</i> Date: 26/4/24 Time: 4:30 PM 19.3°C						

Please return completed form to Envirowest Consulting, *A = Solvent rinsed glass jar with Teflon lined lid and green label, B= Plastic with green label, C= Amber with green label, D= Vial with white label, E= Plastic with red label, F = ziplock bag, G = plastic bag

Chain of Custody Form – Ref 44202

Sheet 2 of 2

[illegible]

Please return completed form to Envirowest Consulting, *A = Solvent rinsed glass jar with Teflon lined lid and green label, B= Plastic with green label, C= Amber with green label, D= Vial with white label, E= Plastic with red label, F = ziplock bag, G = plastic bag

Appendix 5. Soil sampling protocols

1. Sampling

The samples will be collected from the auger tip, mattock, hand auger or excavator bucket immediately on withdrawal.

The time between retrieval of the sample and sealing of the sample container will be kept to a minimum.

The material will be collected using single use disposal gloves or a stainless-steel spade which represented material which has not been exposed to the atmosphere prior to sampling.

All sampling jars will be filled as close to the top as possible to minimise the available airspace within the jar.

2. Handling, containment and transport

Daily sampling activities will be recorded including sampling locations, numbers, observations, measurements, sampler, date and time and weather condition.

The sampling jars will be new sterile glass jars fitted with plastic lid and airtight Teflon seals, supplied by the laboratories for the purpose of collecting soil samples for analysis. Sample containers will be marked indelibly with the sample ID code to waterproof labels affixed to the body of the container.

All samples will be removed from direct sunlight as soon as possible after sampling and placed in insulated containers. Samples will be stored in a refrigerator at 4°C prior to transportation to the laboratory in insulated containers with ice bricks in accordance with AS4482.1.

Handling and transportation to the laboratory will be accompanied with a chain of custody form to demonstrate the specimens are properly received, documents, processed and stored.

Maximum holding time for extraction (AS4482.1) are:

Analyte	Maximum holding time
Metals	6 months
Mercury	28 days
Sulfate	7 days
Organic carbon	7 days
OCP, OPP, PCB	14 days
TRH, BTEX, PAH, phenols	14 days

3. Decontamination of sampling equipment

Sampling tools will be decontaminated between sampling locations by

- Removing soil adhering to the sampling equipment by scraping, brushing or wiping
- Washing with a phosphate-free detergent
- Rinsing thoroughly with clean water
- Repeating if necessary
- Collect rinsate per sampling time and preserve according to AS 2031.1
- Dry equipment with disposable towels or air

Appendix 6. Unidentified finds procedure

Unidentified finds procedure

1. Introduction

Land rezoning is proposed for 18 to 26 Lambert Street, Bathurst NSW.

A procedure is required describing the actions if potential contamination or hazards are encountered during demolition / soil disturbance / subdivision / excavation / construction activities.

2. Scope

Prepare a procedure to enable the identification and management of unexpected hazards identified during excavation works and/or construction activities.

3. Site identification

18 to 26 Lambert Street, Bathurst NSW.

4. Responsible person

The landowner / site supervisor is responsible for implementation of the unexpected finds protocol. The landowner will appoint an environmental scientist to induct and provide information on hazard identification and responses to earthwork supervisors and personnel which may uncover unexpected hazards.

5. Identification of unexpected hazards

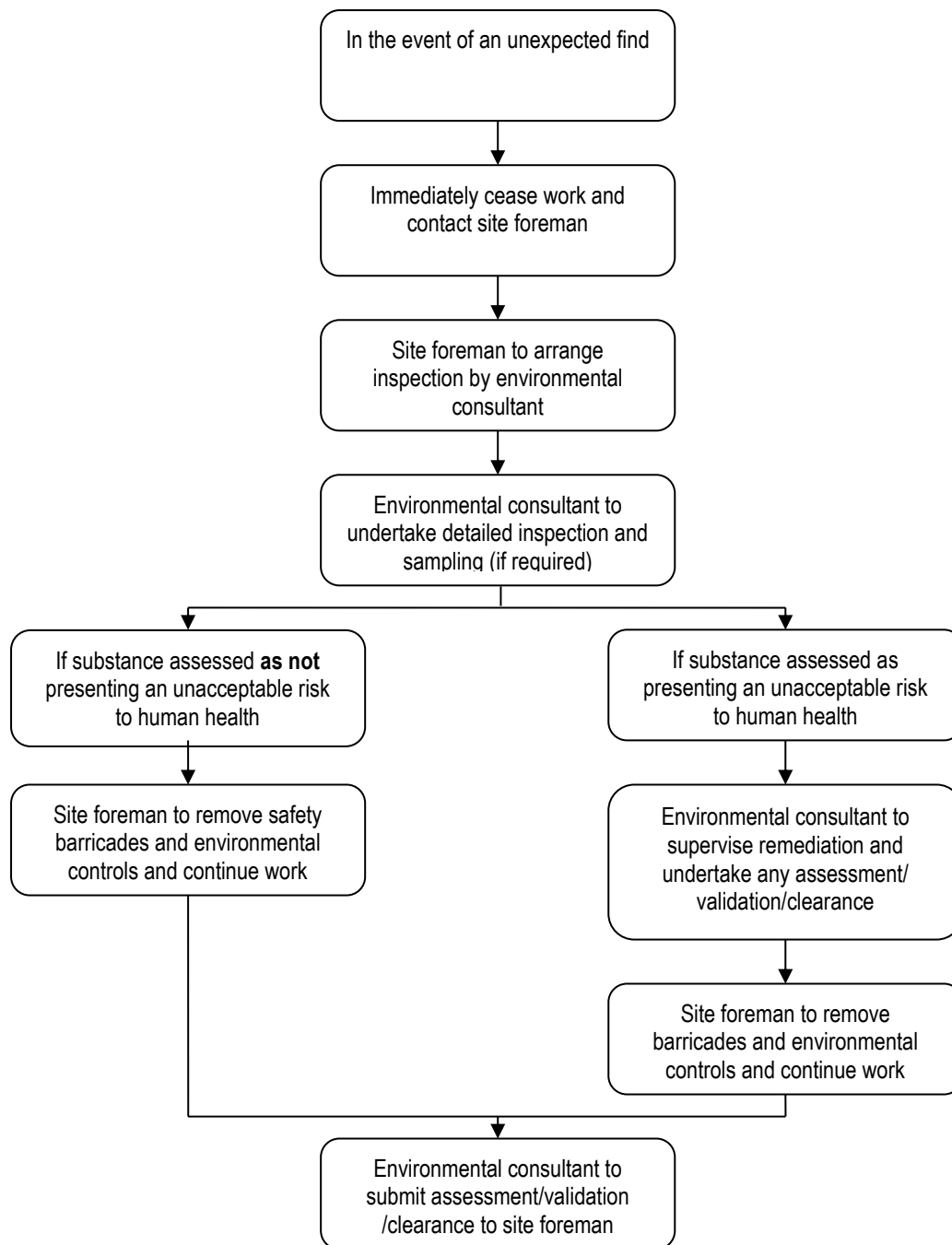
Potential hazards will be identified by appearance and odour include:

- A filled pit or gully
- Demolition waste
- Discoloured soil
- Oil/diesel/tar
- Sheens on water
- An offensive odour
- Asbestos cement sheeting
- Ash or slag
- Underground storage tank

6. Training and induction

All excavation/construction personnel are to be inducted on the identification of potential hazards. The induction can be undertaken at the time of general site induction and toolbox meetings. The training will include display of information to alert worker of potential hazards.

7. Procedure



8. Recommencement of works

The potential hazards will be assessed by the environmental scientist and a report prepared describing:

- Preliminary assessment of the contamination and need for clean-up
- Preparation of a remediation action plan
- All works to be undertaken in accordance with contaminated site regulations and guidelines
- Remediation works
- Validation of the remediation
- Works can commence on the potentially hazardous area after the environmental scientist has provided a clearance.

Information to assist workers in identifying hazards.

**BE AWARE
UNEXPECTED HAZARDS MAY BE PRESENT**



drums



asbestos



chemical bottles



blood stains



odour



ash / slag



demolition waste

if you SEE or SMELL anything unusual



STOP WORK & contact the Site Foreman



do not restart working before the area has been
investigated and cleared by an Environmental
Consultant

Appendix 7. EW Testing services report

Envirowest Consulting Pty Ltd ABN 18 103 955 246 trading as

EW Testing Services

- 9 Cameron Place, PO Box 8158, Orange NSW 2800 • Tel (02) 6361 4954 •
- Email admin@envirowest.net.au • Web www.envirowest.net.au •

Environmental
Geotechnical
Asbestos
Services



ASBESTOS IDENTIFICATION REPORT

Client	BAR Constructions Pty Ltd	Report number	LR44202id
Contact	Erin		
Address	Unit 2/11 Lombard Drive Robin Hill NSW 2795	Date	29 April 2024

Site location	18-26 Lambert Street Bathurst NSW, 2795
Sampled by	Felipe Canavez
Date received	26 April 2024
Date tested	29 April 2024
Test method	Identification using polarized light microscopy with dispersion staining in accordance with <i>Method for the qualitative identification of asbestos in bulk samples</i> (AS4964-2004) and EW Testing Services in-house method TA2.

Sample ID	Location	Description	Results
44202-1	Ground	10g fibrous cement sheet	Amosite (brown asbestos) detected Chrysotile (white asbestos) detected

Sampling: NATA accreditation does not cover the performance of this service

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Carmen King

Carmen King
Approved asbestos analyst



Accredited for compliance with
ISO/IEC 17025 – Testing
Accreditation number: 19800