Preliminary contamination investigation

92 Euchareena Road, Molong NSW

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Summary report

Background

A residential subdivision is proposed for 92 Euchareena Road, Molong NSW. The site has an agricultural land-use history comprising of grazing. Agricultural infrastructure including a shearing shed is located in the western section of the site. An overgrown pine plantation is present in the south western section of the site.

An investigation of the site is required to determine soil contamination status and suitability for the proposed land-use.

Objectives of investigation

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

Scope

The scope was to identify past potentially contaminating activities, identify potential contamination types, discuss the site condition, provide an assessment of site contamination and assess the need for remediation or suitability for residential land-use. The scope of works included site inspection, review of available information, soil sampling and analysis.

Summary

The site is an agricultural grazing property on the eastern outskirts of Molong. Inspections were made on 27 and 28 October and 17 November 2022. Stock grazed is expected to be historically sheep and more recently cattle. Infrastructure comprising two shearing sheds, two animal shelters and yards are located in the western section of the site. A water tank, truck with storage tank and transportable yards are present in the central section.

Vegetation cover on the site was generally 100% dominated by pasture grasses included phalaris, wild oats, clover. Broad leaved weeds included horehound, Paterson's curse and thistle. Remnant eucalypt trees occur across the site. A bare area was identified in central northern section of the site. A dry drainage depression was present along the southern boundary and had sparse vegetation expected to be a result of prolonged water logging.

The concrete floor section of the western shearing shed was being used to store various items including iron, timber, equipment, car battery, 44 gallon drum and bulker bag. A dry white powder was identified on the floor and expected to be lime or fertiliser. A stained area was present on the concrete. The concrete is expected to have restricted movement of the staining source into the soil.

No evidence of fill, sheep dips, mines or contaminating industrial activities were identified at the site. No asbestos containing materials were identified on the site.

Soil samples were collected from the general site on an approximate 50m grid pattern. The soil samples were collected at the 0 to 100mm depth and evaluated for heavy metals. Additional samples were collected from potential locations considered areas of environmental concern (AEC) at the 50 to 100mm depth and evaluated for heavy metals and hydrocarbons.

Levels of heavy metals collected from across the general site were below the adopted thresholds for human health and environment.

Levels of zinc in three samples collected from adjacent structures in the western section exceeded the environmental investigation levels. Vegetation in the areas was not showing signs of impact from the

elevated zinc levels. Other heavy metals were below adopted thresholds in all samples from areas of environmental concern.

Levels of TRH (C16-C34) exceeded adopted environmental screening levels in the sample collected from the dry drainage depression located along the southern boundary. The TRH is expected to be natural from degrading vegetation within the dam. Levels of other hydrocarbons in samples collected from areas of environmental concern were below adopted thresholds.

Recommendations

Additional assessment should be undertaken following removal of the structures in the western section to confirm suitability for residential land-use.

Contents

page

1. Introduction

A residential subdivision is proposed for 92 Euchareena Road, Molong NSW. The site has an agricultural land-use history comprising of grazing. Agricultural infrastructure including a shearing shed is located in the western section of the site. An overgrown pine plantation is present in the south western section of the site.

An investigation of the site is required to determine soil contamination status and suitability for the proposed land-use.

2. Objectives

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

3. Scope of work

Envirowest Consulting Pty Ltd was commissioned by Wakefield Ashurst Developments Pty Limited to undertake a preliminary contamination investigation, in accordance with the contaminated land management planning guidelines, from the *Contaminated Land Management Act 1997* and the *SEPP (Hazards and Resilience)*, of 92 Euchareena Road, Molong NSW. The scope of works included site inspection, review of available information, soil sampling and analysis.

4. Site identification

Address	92 Euchareena Road Molong NSW
Deposited plans	Lot A DP961931
Latitude and longitude	-33.09^{o} 148.88^{o}
Geographic coordinates	55H E649972m N6432033m
Client	Wakefield Ashurst Development Pty Limited
Owner	MA Miller and N McKenzie
Current occupier	Not known
Area	78ha
Local government area	Cabonne Council
Current zoning	R5: Large lot residential (Cabonne LEP 2012)
Trigger for investigation	Change in land-use
Locality map	Figure 1

5. Site history

5.1 Land-uses

Land-use of the site at the time of inspection was sheep grazing. Sheep grazing is the historical land-use on the site. A stand of pine trees are present in the south western section. Agricultural infrastructure is present in the western section and includes four sheds and sheep yards. Two of the sheds are shearing sheds and storage of farming equipment and chemicals.

5.2 Summary of council records

A planning certificate was obtained for Lot A DP961931, 92 Euchareena Road, Molong NSW. Cabonne 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.

Cabonne Local Environmental Plan (LEP 2012) has the site mapped as:

- Biodiversity
- Groundwater vulnerable

5.3 EPA databases

The site is not listed on the NSW EPA register of contaminated sites (6 February 2023) or sites notified to the EPA (10 January 2023).

A service station and former gasworks located approximately 500m west of the site are identified as sites on the NSW EPA register of contaminated sites and notified to the EPA. The Cabonne BP Service Centre located at 2 Gidley Street, Molong NSW is currently regulated under the CLM Act. The former gasworks located at Hill Street, Molong NSW is currently managed by ongoing maintenance to manage residual contamination. Contamination from the service station and former gasworks 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 no use of fuels was indicated from the searches and past land-uses.

5.5 POEO public register

The site is not listed on the NSW EPA POEO public register.

One site listed on NSW EPA POEO public register have been identified within 1km of the site. The site is the Cabonne Service Centre located approximately 500m west. Potential contamination originating from the Cabonne Service Centre is not expected to impact the site due to expected surface water flow direction.

5.6 Other government agency databases

The site is not listed on the following databases:

- National Liquid Fuel Facilities database
- The NSW Government PFAS Investigation Program
- Defence PFAS Investigation Program
- Defence PFAS Management Program
- Defence 3 Year Regional Contamination Investigation Program

- Airservices Australia National PFAS Management Program

The National Liquid Fuel Facilities database identifies one petrol station within 1km of the investigation area. Potential contamination from the petrol station is not expected to be impacting on the site.

No additional sites listed on government agency databases have been identified within 1km of the investigation area.

5.7 Sources of information

Site inspection 27 and 28 October and 17 November 2022 by Felipe Canavez of Envirowest Consulting Pty Ltd
NSW EPA records of public notices under the CLM Act 1997
Soil and geological maps
Historical aerial photographs (1964, 1973,1982, 1989, 1993, 1998, 2007, 2011, 2016, 2018, 2020, 2021) including NSW Government historical imagery, Google Earth and Nearmap
Cabonne LEP 2012

5.8 Review of historic aerial photographs, maps and plans

5.8.1 Aerial photographs

Year	Comment
1964	The site is mostly cleared with scattered remnant trees. A tree lot is present in the south western corner. Land-use is grazing. Two sheds and three dams are visible on the site. Residential land-use is present to the west and rural land-use comprising grazing on other directions.
1973	Four sheds and sheep yards are visible in the western section of the site
1982	No significant changes to the site.
1989	No significant changes to the site.
1993	The paddock which contains the sheds appears to have been maintained by slashing.
1998	Vegetation is desiccated expected to be due to seasonal conditions.
2007	The three dams on the site are dry.
2011	Vegetation has greened on the site. A truck is located in the central section of the site and expected to be the truck identified on site adjacent the tank.
2016	Dams contain water. A tree has died in the central western section of the site
2018	Vegetation appears desiccated. Beehives are present through the central section of the site.
2020	Most areas are green with some areas of reduced vegetation expected to be due to recovery from drought. Beehives have been removed.
2021	Beehives are present through central to north eastern section. Similar in appearance to 2018 but in different locations. The area of the dead tree appears uneven potentially indicating the tree has fallen over and branches scattered on the ground.

5.8.2 Topographic maps

The 1981 topographic map based in 1971 aerial and field revision in 1977 depicts the site as containing scattered timber. Medium timber is present in the south west corner. Two buildings are present along the western boundary and are expected to be the shearing sheds.

The current topographic map (Six Maps) depicts the majority of the site as vacant with two dams through the central southern section.

5.8.3 Historical parish maps

The site is situated in the parish of Gamboola, county of Wellington and review of the applicable historical parish maps was undertaken. The 1886 historical parish map indicates the site is owned by Mrs J Betts. The 1895 map indicates the site is owned by The Revd Fred Wilkinson and Richard Sadlier (in trust). The site was part of a larger lot which extended north and east. Sketching on the plan indicates the site was to be subdivided into numerous small lots. The site is owned by The Revd Fred Wilkinson and Richard Sadlier in the 1908 and 1915 maps. Proposed lot boundaries are no longer present on the 1938 map.

5.8.4 Title search

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
05.08.1919 (1919 to 1946)	Frederick Lindsay Betts (Agent)	Volume 2958 Folio 138
26.02.1946 (1946 to 1950)	William Arnold Conolly (Medical Practitioner)	Volume 2958 Folio 138
05.06.1950 (1950 to 1982)	Richard Starr (Farmer and Grazier)	Volume 2958 Folio 138
21.09.1982 (1982 to 1984)	Margaret Enid Starr Richard William Starr Janet Kathleen Lovett Gwenneth Nancy Saunders (Transmission application, not investigated)	Volume 2958 Folio 138
10.09.1984 (1984 to 1984)	Margaret Enid Starr	Volume 2958 Folio 138
10.09.1984 (1984 to 2008)	Margaret Enid Starr Richard William Starr	Volume 2958 Folio 138 Now A/961931
24.08.2008 (2008 to 2018)	Margaret Enid Starr Nancy Louise Starr	A/961931
19.11.2018 (2018 to 2022)	Margaret Enid Starr Margo Anne Miller David Patrick Brough Bradford Frederick McInnes Stuart	A/961931
13.05.2022 (2022 to 2022)	Margaret Enid Starr Margo Anne Miller	A/961931
12.08.2022 (2022 to Date)	Narelle Anne McKenzie Margo Anne Miller	A/961931

5.9 Chronological list of site uses

Review of historical information suggests the site has a land-use history as grazing with shearing sheds and yards located in the western section of the site.

5.10 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 (Cabonne LEP 2012)

Heritage items are identified within 1km west of the site within the township of Molong. The heritage items are not expected to have impacted on the contamination status of the site.

5.11 Buildings and infrastructure

Four buildings are located in the western section of the site. The buildings comprise two shearing sheds and two small stock shelters. The western shearing shed has iron walls and roof and concrete floor in the eastern section and timber floor in the western section. Materials were being stored on the concrete floor area of the shed and included iron, timber, equipment, battery, 44 gallon drum and fertiliser bulker bag. A dry white powder was identified on the floor and expected to be lime or fertiliser. Staining was identified adjacent the battery on the concrete floor. Small metal yards are located adjacent the shearing shed for managing sheep prior to and after shearing. No sheep dips were identified around the shearing shed.

The eastern shearing shed has iron walls and roof and timber floor. The shed did not appear to be currently used for shearing. No sheep dips were identified around the shearing shed. No indicators of contamination were identified in the shed.

The northern animal shelter comprised iron walls and roof with earthern floor in the northern section and concrete floor in the southern section. A wooden stock trough was present along one wall in the northern section. A wooden bail was present in the southern section indicating it was used for milking cows.

The southern animal shelter comprised iron walls and roof and concrete floor. A wooden trough is located along one wall. No indictors of contamination were identified.

Small wooden sheep yards with a stock ramp are present to the north east of the eastern shed. The yards did not appear to currently be in use.

A water tank connected to a trough is present in the central section of the site. Small transportable yards and loading ramp are present south of the tank.

Farm fences are located across the site to divide the site into paddocks for grazing.

5.12 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.

5.13 Relevant complaint history

None expected

5.14 Previous investigations

None known

5.15 Historical neighbouring land-use

North – Euchareena Road, rural, grazing
South – Marsden Street, rural-residential, residential
East – Rural, grazing
West – Bertie Cole Street, residential, Molong Creek

Historical neighbouring land-uses are not expected to have impacted on the site.

5.16 Contaminant sources

The agricultural land-use may have resulted in application of pesticides in routine farm management. Fertilizers applied may contain heavy metal contaminants. Pesticides may have been applied in the general management of pastures. No bio solids are known to have been applied to the site.

Sheep dips are commonly associated with shearing sheds. No evidence of sheep dips were identified around the shearing sheds.

The sheds on the site may have stored agricultural chemicals and fuels.

A truck with a fuel storage tank is stored in the central section of the site. The fuel storage tank is reportedly used to store water.

Disturbed soils may indicate importation of fill.

5.17 Contaminants of concern

Based on historical mixed agricultural activities and site inspection the contaminants of concern associated with the general site are:

- Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc)

Based on historical activities and site inspection the contaminants of concern associated with sheds and 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)

5.18 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.

6. Site condition and surrounding environment

6.1 Site inspection

The site was inspected by Felipe Canavez of Envirowest Consulting Pty Ltd on 27 and 28 October and 17 November 2022.

6.2 Land-use

The site is currently used for sheep grazing. The sheds in the western section do not appear to be currently used.

6.3 Current neighbouring land-use

North – Euchareena Road, rural, grazing
South – Marsden Street, rural-residential, residential
East – Rural, grazing
West – Bertie Cole Street, residential

6.4 Surface cover and vegetation

Vegetation cover on the site was generally 100% dominated by pasture grasses included phalaris, wild oats and clover. Broad leaved weeds were identified including horehound, Paterson's curse and thistle. Remnant eucalypt trees occur across the site. A pine plantation is present in the south western section of the site. The area was overgrown with shrubs which restricted access.
One small area of bare soil was identified in the central northern section of the site.

6.5 Evidence of visible contamination

A bare area of soil was present in the central northern section of the site. The bare area may be a result of contamination impacting on vegetation.

Stained concrete is present in the western shed. The concrete is expected to have prevented spills entering the soil.

A battery is present on the concrete in the western shed. Concrete is expected to have prevented leaks from the battery entering the soil.

No evidence of fill, sheep dips, mines or contaminating industrial activities was identified on the site.

No signs of settlement or subsidence was identified on the site.

6.6 Topography

The morphology is a mid-slope with moderately inclined slopes to the west in the western section and gently inclined slopes to the south, west and north in the central and eastern sections. Elevation is approximately 550 to 580 metres above sea level.

6.7 Soils and geology

The study area is within the Molong Soil Landscape (Kovac *et al.* 1990). Dominant soils within the landscape are euchrozems with non-calcic brown soils and yellow podzolic soils on the lower slopes.

The site is underlain by Cargo Andesite (Kovac *et al.* 1990). Parent rock comprises andesite, tuff, slate and limestone. Parent material is *in situ* and alluvial-colluvial materials derived from parent rocks.

6.8 Water

6.8.1 Surface water

Three dams are located on the site. Two of the dams are located within a drainage depression in the southern section of the site. Surface water is expected to infiltrate or flow into the dams and drainage depressions and off-site to the north, south and west. Surface water flows off-site into the Molong stormwater system which discharges into Molong Creek. Molong Creek is located approximately 250m west of the site.

6.8.2 Groundwater

No groundwater bores were identified on the site on the NSW Government Water NSW website (2022). Twenty registered groundwater bores are identified within 500m of the site on the NSW Government Water NSW website (2022). The bores are licenced for stock, domestic or monitoring. Monitoring wells are associated with the former Molong Gasworks site and the former Mobil Service Station. Water-bearing zones (WBZ) for bores which information is available was from 7m in limestone and basalt. Standing water level was from 3.3m.

No.	Date drilled	Location	SWL (m)	Use	Status
GW801546	2002	125m N	7	Stock, domestic	Supply obtained
GW043832	1975	230m N	3.3	Stock	Current
GW803085	2006	260m N	-	Stock, domestic	Supply obtained
GW804041	2008	350m W	3.8	Monitoring	Equipped
GW804042	2008	350m W	3.8	Monitoring	Equipped
GW804039	2008	350m W	3.8	Monitoring	Equipped
GW804038	2008	350m W	4.8	Monitoring	Equipped
GW804037	2008	350m W	3.8	Monitoring	Equipped
GW803046	2005	170m W	12	Stock, domestic	Supply obtained
GW804040	2008	350m W	3.8	Monitoring	Equipped
GW804294	2010	430m W	4	Domestic	Supply obtained
GW704120	2008	450m W	-	Monitoring	Equipped
GW704121	2008	450m W	-	Monitoring	Equipped
GW704119	2008	450m W	-	Monitoring	Equipped
GW704118	2008	450m W	-	Monitoring	Equipped
GW704128	2008	450m W	-	Monitoring	Equipped
GW704124	2008	450m W	-	Monitoring	Equipped
GW047053	1977	160m S	19.8	Irrigation	-
GW054232	1980	290m S	-	Stock, domestic	Current
GW802920	1993	390m W	15.2	Stock, domestic	Supply obtained

6.9 Evidence of possible naturally occurring contaminants

No natural sources of 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 identified as an area of vulnerable groundwater and biodiversity (Cabonne LEP 2012). Open woodland is present throughout the site. No additional environmentally sensitive features or habitats are located on the development area.

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. The historic agricultural land-use comprising grazing may have resulted in application of pesticides, fertilisers and contaminating activities to the site.

The shearing sheds may have resulted in storage and use of chemicals and fuels. A sheep dip may be associated with the shearing sheds. The sheds may have resulted in the application of contaminants.

Storage of a vehicle and fuel tank used to store water in the central section of the site may have resulted in spills and leaks of fuels.

7.2 Contaminants of concern

Based on historical mixed agricultural activities and site inspection the contaminants of concern associated with the northern and southern sub-sections of the site are:

- Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead and zinc)

Based on historical activities and site inspection the contaminants of concern associated with sheds and 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)

7.3 Potential receptors

The proposed land-use of the site is residential. The site has historically been used for agriculture comprising grazing.

Human receptors include:

- Residents (adults and children)
- Visitors
- Site workers
- 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. Inhalation 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 production.

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 well vegetated 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 or hard surfaces will be re-established which will control sediment movement from the site. The nearest waterway to the site is the Molong Creek and it is not expected that contaminants from the site will be transported to aquatic receptors within the creek. The Molong Creek is considered to be a moderately disturbed ecosystem.

The site is mapped as a groundwater vulnerable area. Groundwater is not identified as a potential receptor to contamination as potential contamination occurs on the surface and groundwater is identified at depths greater than 3m and the clay subsoils, limestone and basalt layer restrict downward movement of potential contaminants.

Source/contaminants	Transport	Potential exposure pathways	Receptors
☒ Pesticides Heavy metals	☐Wind ☐Sedimentation ☐Groundwater ☐Surface water ☐Volatilisation	☒Direct contact (ingestion and absorption) (human and environment) ☒Inhalation ☐Runoff ☐Leaching	☒Residents (adults and children) ☒Visitors (adults and children) ☒Construction workers ☒Intrusive maintenance workers ☒Vegetation ☐Aquatic receptors
☒ Fertilisers Heavy metals	☐Wind ☐Sedimentation ☐Groundwater ☐Surface water ☐Volatilisation	☒Direct contact (ingestion and absorption) (human and environment) ☒Inhalation ☐Runoff ☐Leaching	☒Residents (adults and children) ☒Visitors (adults and children) ☒Construction workers ☒Intrusive maintenance workers ☒Vegetation ☐Aquatic receptors
☒ Sheds, truck, disturbed areas Heavy metals TRH BTEXN PAH	☐Wind ☐Sedimentation ☐Groundwater ☐Surface water ☐Volatilisation	☒Direct contact (ingestion and absorption) (human and environment) ☒Inhalation ☐Runoff ☐Leaching	☒Residents (adults and children) ☒Visitors (adults and children) ☒Construction workers ☒Intrusive maintenance workers ☒Vegetation ☐Aquatic receptors

☒Potential, ☐unknown/unlikely

8. Data quality objectives (DQO)

8.1 State the problem

Investigations are required to determine the suitability for proposed land-use.

8.2 Identify the decision

The proposed land-use is residential. The decision problem is, do the levels of potential contaminants exceed the assessment criteria.

8.3 Identify the inputs decision

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

- Field observation of aesthetic impacts or visible contamination
- Soil samples from the investigation area

8.4 Define the boundaries of the study

The investigation area is 92 Euchareena Road, Molong NSW.

8.5 Develop a decision rule

Data collected for the purpose of the contamination investigation must be sufficiently accurate to be representative. 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 potential contamination and analysis at accredited laboratories.

The adopted criteria is suitability for residential land-use and includes the thresholds 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 and if further sampling and analysis is needed to delineate the nature and extent of contamination.

The decision rule for the investigation are:

- If the contamination levels were less than the adopted levels are potential risks low and acceptable
- If the levels were equal or greater that the investigations levels 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 over estimation 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
- The 95% upper confidence interval of average levels of samples collected is less than the threshold levels, the results are less than 250% of relevant thresholds and the standard deviation is less than 50% of the assessment criteria.

8.7 Optimize the design for obtaining data

The methodology present 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 heavy metals, TRH (C6-C40), BTEXN and PAH.

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 for the site. Uniform management practices are expected to have occurred across the site.

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

9.1.2 Sampling locations

Discrete soil samples were collected from the site on an approximate 50m grid pattern. A total of 306 discrete soil samples were collected from the general site and analysed for heavy metals. Access to the pine forest in the south western corner was restricted due to the presence of dense shrubs. Limited sampling was undertaken.

Ten soil samples were collected from potential areas of environmental concern. Sampling locations at areas of environmental concern were selected based on the most likely location of contaminants. Sample HS7 was collected directly beneath the storage tank and HS8 was collected from directly beneath the engine bay. Other areas of environmental concern were sampled at locations of surface water flow paths.

Three sludge samples were collected from the dams.

The sampling locations are described in Figures 3, 4 and 5.

9.1.3 Sampling density

The sampling density can detect a potential hot spot across the general site with a radius of 30m at a 95% level of confidence.

The sampling frequency is less than the minimum recommended by EPA (2022) but expected to be sufficient due to uniform management and preliminary nature of the investigation.

The number of samples collected from areas of environmental concern are expected to be sufficient to enable preliminary assessment.

9.1.4 Sampling depth

Any heavy metals or persistent pesticides present are generally immobile and expected to be contained in the 0 to 100mm which was the target sampling depth as minimal soil disturbance has occurred.

Samples from potential areas of environmental concern were collected from the 50 to 150mm soil layer to enable assessment of volatile hydrocarbons. Potential contaminants are expected to originate from the soil surface.

9.2 Analytes

Discrete soil samples collected from the general site were evaluated for arsenic, cadmium, chromium, copper, lead, nickel and zinc. Heavy metals were identified as the contaminants of concern possibly present as a result of agricultural activities.

Soil samples collected from areas of environmental concern were analysed for arsenic, cadmium, chromium, copper, lead, nickel, zinc, mercury, TRH (C6-C40), BTEXN and PAH.

9.3 Sampling methods

Soil samples were taken using a stainless steel hand spade or soil corer. Soil was taken at each individual sampling location below the vegetative and detrital layer.

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.

Soil sampling protocols are outlined in Appendix 4.

The sample log including schedule of analysis is present in Appendix 2.

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.

Discrete soil samples were collected from the general site on a systematic grid pattern of approximately 50 metres. This sampling density will enable the detection of an area with an elevated concentration on a radius of 30m with a 95% confidence level.

The number of sampling locations throughout the general site is less than the minimum recommended density in the EPA sampling guidelines but expected to be sufficient due to uniform management of the site and preliminary nature of the investigation.

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

10.2 Field

The collection of samples was undertaken in accordance with accepted standard protocols (NEPC 1999).

All discrete samples were analysed for arsenic, cadmium, chromium, hexavalent chromium, copper, lead, nickel and zinc. Discrete soil samples collected from areas of environmental concern were additionally analysed for hydrocarbons.

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 3).

A single sampler was used to collect the samples using standard methods. Soil collected was a fresh sample from soil corer. After collection the samples were immediately placed in new glass sampling jars and placed in a cooler.

Seventeen 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 laboratories have 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 3.

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.

Two samples were collected for assessment of cation exchange capacity (CEC), clay content and pH. The average result was adopted in the calculations for EIL (Table 1). The result indicates CEC of soils is 10meq/100g, clay content of 36%, pH value of 5. Organic carbon for soils in the locality are typically 3% (eSPADE v2.2). The proposed land-use is residential. The contaminants have been identified in the soil for at least two years and are considered aged. The ASC NEPM EIL calculation spreadsheet was used to determine the EIL. Default values for ambient background concentrations were adopted.
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.

Table 1. Soil properties for EIL calculation

Analyte	pH	CEC	Clay (%)
GC108	4.6	4.2	42
GC218	5.4	16	29
Average	5	10.1	36

Table 2. EIL Calculation sheet, residential land-use

Analyte	Rationale	EIL (mg/kg)
Arsenic	Generic	100
Chromium (III)	Clay content 36%	620
Copper	CEC 10meq/100g, pH 5, organic carbon 3%	100
Lead	Generic	1,100
Nickel	CEC 10meq/100g	170
Zinc	CEC 10meq/100g, pH 5	260
Naphthalene	Generic	170
DDT	Generic	180

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).

Table 3. Assessment criteria

Analyte	*HIL A*	*Residential HSL clay soil, 0m to <1m*	*Residential EIL*	*Residential ESL fine soil*	*Management limits, Residential*
Arsenic	100	-	100	-	-
Cadmium	20	-	-	-	-
Chromium	100[1]	-	620[2]	-	-
Copper	6,000	-	100	-	-
Lead	300	-	1,100	-	-
Nickel	400	-	170	-	-
Zinc	7,400	-	260	-	-
Mercury	40	-	-	-	-
OCP	-	-	-	-	-
DD's	240	-	-	-	-
DDT	-	-	180		
F1 (TRH C6-10)	-	50	-	180	800
F2 (TRH C10-16)	-	280	-	120	1,000
F3 (TRH C16-34)	-	-	-	1,300	3,500
F4 (TRH C34-40)	-	-	-	5,600	10,000
Benzene	-	0.7	-	65	-
Toluene	-	480	-	105	-
Ethylbenzene	-	NL	-	125	-
Xylenes	-	NL	-	45	-
Naphthalene	-	5	170	-	-
Benzo(a)pyrene		-	-	0.7	-
Carcinogenic PAH	3	-	-	-	-
PAH (Total)	300	-	-	-	-

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 Site inspection

The site was well vegetated and dominated by pasture grasses with remnant eucalypts at the time of site inspection. The site has a historical land-use of grazing which is expected to comprise sheep.

Two shearing sheds are present in the western section of the site. No sheep dips were identified around the sheds. The western section of the western shearing shed was being used for storage of numerous items including inert items such as iron, timber, bulker bag and equipment. Other items were a car battery and 44 gallon drum. Staining was identified on the ground. The area has a concrete floor and expected to restrict movement of potential contaminants. No evidence of contamination were identified in the stock shelters.

An uneven area identified in aerial photographs in the central western section were determined to be from a fallen tree.

No evidence of fill, mines or contaminating industrial activities were identified at the site.

12.2 Analytical results

12.2.1 General site

Levels of heavy metals in the samples collected across the general site were very low and at background levels. Levels of heavy metals were less than the adopted thresholds for human health and environment. A summary of the results is provided in Table 4 and individual results are provided in Appendix 5.

12.2.2 Areas of environmental concern

Levels of zinc exceeded the adopted EIL in samples HS2, HS4 and HS5 (Table 7). The samples were collected from adjacent the western shearing shed, northern animal shelter and southern stock shelter. Vegetation in this area was 100% and did not appear impacted by the elevated zinc. The zinc is expected to be from leaching of the iron walls and roof.

Levels of metals for other samples collected from areas of environmental concern were less than adopted thresholds (Table 7).

Levels of TRH (C16-C34) exceeding the adopted ESL were identified in sample HS10 collected from a dry drainage depression in the southern section of the site. No evidence of staining was identified in the drainage depression. Vegetation was sparse within the drainage depression expected to be a result of prolonged water logging and presence of water which has recently dried out. Degrading vegetation resulting from waterlogging is expected to be the source of the TRH.

Levels of TRH, BTEXN and PAH in other samples were below detection limits and less than the health and ecological thresholds (Tables 5, 6 and 7).

Table 4. Summary of analytical results and threshold concentrations (general site) - heavy metals (mg/kg)

Sample ID	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc
Arithmetic mean	6.27	-	20.86	38.59	5.67	9.19	43.17
Standard deviation	0.22	-	0.84	1.44	0.16	0.34	1.05
Maximum	20	<0.30	75	99	41	39	79
Median	5	<0.30	21	41	5	9.85	48
Confidence interval	0.44	-	1.65	2.84	0.32	0.68	2.07
95% UCL	6.70	-	22.51	41.43	6.00	9.87	45.25
Number	306	306	306	306	306	306	306
Health Investigation Levels – Residential land-use threshold (NEPC 1999)							
	100	*20*	*100[1]*	*6,000*	*300*	*400*	*7,400*
Ecological Investigation Levels – Residential land-use threshold (NEPC 1999)							
	100	*-*	*620[2]*	*100*	*1,100*	*170*	*260*

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

Table 5. Analytical results and threshold concentrations (areas of environmental concern) - heavy metals and PAH (mg/kg)

Sample ID	Location	Depth (mm)	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc	Mercury	Carcinogenic benzo(a)pyrene	Total PAH
HS1	Stock pen	50-150	12	<0.3	2.9	11	8	1.5	91	0.09	<0.3	<0.8
HS2	West of western shearing shed, surface drain	50-150	3	<0.3	4.2	7.8	78	1.5	**660**	<0.05	<0.3	<0.8
HS3	South west of western shearing shed, flow direction of surface water	50-150	2	0.4	3.1	7.4	5	1.7	59	<0.05	<0.3	<0.8
HS4	Northern animal shelter	50-150	8	0.9	4.6	11	34	2.9	**1,600**	<0.05	<0.3	<0.8
HS5	Southern animal shelter	50-150	3	<0.3	3.1	8.9	10	1.8	**490**	<0.05	<0.3	<0.8
HS6	Disturbed soil	50-150	5	<0.3	2.4	5.0	3	1.5	14	<0.05	<0.3	<0.8
HS7	Storage tank	50-150	8	<0.3	22	57	6	11	63	0.09	<0.3	<0.8
HS8	Truck engine bay	50-150	6	<0.3	21	56	6	12	48	0.15	<0.3	<0.8
HS9	Bare area	50-150	6	<0.3	29	76	4	16	63	<0.15	<0.3	<0.8
HS10	Dry drainage depression	50-150	7	<0.3	13	47	5	7.5	59	0.10	<0.3	<0.8
SL1	Southern dam	0-100	3	<0.3	4.2	7.0	4	2.1	15	-	-	-
SL2	Central dam	0-100	9	<0.3	25	50	7	9.7	58	-	-	-
SL3	Northern dam	0-100	5	<0.3	18	34	4	10	37	-	-	-
Health Investigation Levels – Residential land-use threshold (NEPC 1999)												
			100	*20*	*100[1]*	*6,000*	*300*	*400*	*7,400*	*40*	*3*	*300*
Ecological Investigation Levels – Residential land-use threshold (NEPC 1999)												
			100	*-*	*620[2]*	*100*	*1,100*	*170*	*260*	*-*	*0.7*	*-*

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

Table 6. Analytical results and threshold concentrations (areas of environmental concern) - OCP (mg/kg)

Sample ID	Location	OCP	DDs	DDT
SL1	Southern dam	<1	<0.1	<0.1
SL2	Central dam	<1	<0.1	<0.1
SL3	Northern dam	<1	<0.1	<0.1
Health Investigation Levels – Residential land-use threshold (NEPC 1999)				
		-	*240*	*-*
Ecological Investigation Levels – Residential land-use threshold (NEPC 1999)				
		-	*-*	*180*

Table 7. Soil analysis results (areas of environmental concern) – hydrocarbons (mg/kg)

Sample I.D	Location	Depth (mm)	TRH (C6-C10)	TRH (C10-C16)	TRH (C16-C34)	TRH (C34-C40)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	Benzo(a)pyrene
HS1	Stock pen	50-150	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS2	West of western shearing shed, surface drain	50-150	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS3	South west of western shearing shed	50-150	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS4	Northern animal shelter	50-150	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS5	Southern animal shelter	50-150	<25	<25	190	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS6	Disturbed soil	50-150	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS7	Storage tank	50-150	<25	<25	110	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS8	Truck engine bay	50-150	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS9	Bare area	50-150	<25	<25	300	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS10	Dry drainage depression	50-150	<25	240	**2,400**	620	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HSL – Residential clay soil												
		0 to <1m	50	280	-	-	0.7	480	NL	NL	5	-
EIL – Residential												
			-	-	-	-	-	-	-	-	170	-
ESL – Residential												
			180	120	1,300	5,600	65	105	125	45	-	0.7
Management limits – Residential												
			800	1,000	3,500	10,000	-	-	-	-	-	-

ND – not detected, 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 zinc above the EIL were detected in three soil samples collected from adjacent iron structures in the western section of the site. Vegetation was identified as a potential receptor to contamination in the conceptual model. Vegetation at the sampling locations was 100% and did not appear impacted by the elevated zinc.

Levels of TRH(C16-C34) exceeding ecological screening levels for residential land-use was identified in the dry drainage depression along the southern boundary. No evidence of staining was identified in the drainage depression. Vegetation was sparse within the drainage depression expected to be a result of prolonged water logging and presence of water which has recently dried out. Degrading vegetation resulting from waterlogging is expected to be the source of the TRH.

13.2 Chemical degradation production

Heavy metals do not degrade.

Hydrocarbons will slowly degrade over time due to natural attenuation.

13.3 Exposed population

13.3.1 Human health

Levels of all potential contaminants in the soil samples were less than human health investigation thresholds.

13.3.2 Ecological

Potential ecological receptors identified in the conceptual site model was vegetation. Vegetation on the site was generally 100% and dominated by pasture grasses. Elevated levels of zinc around the structures are not expected to be impacting on vegetation. No other ecological receptors were identified.

Levels of TRH(C16-C34) exceeded the ecological screening levels for residential land-use in a drainage depression along the southern boundary. Potential ecological receptors identified in the conceptual site model was vegetation. Vegetation was limited in the drainage depression expected to be a result of prolonged water logging during recent wet seasonal conditions. The elevated hydrocarbons are expected to be natural resulting from degrading vegetation. Vegetation was present around the drainage depression. No other ecological receptors were identified.

14. Conclusions and recommendations

14.1 Summary

The site is an agricultural grazing property on the eastern outskirts of Molong. Inspections were made on 27 and 28 October and 17 November 2022. Stock grazed is expected to be historically sheep and more recently cattle. Infrastructure comprising two shearing sheds, two animal shelters and yards are located in the western section of the site. A water tank, truck with storage tank and transportable yards are present in the central section.

Vegetation cover on the site was generally 100% dominated by pasture grasses included phalaris, wild oats, clover. Broad leaved weeds included horehound, Paterson's curse and thistle. Remnant eucalypt trees occur across the site. A bare area was identified in central northern section of the site. A dry drainage depression was present along the southern boundary and had sparse vegetation expected to be a result of prolonged water logging.

The concrete floor section of the western shearing shed was being used to store various items including iron, timber, equipment, car battery, 44 gallon drum and bulker bag. A dry white powder was identified on the floor and expected to be lime or fertiliser. A stained area was present on the concrete. The concrete is expected to have restricted movement of the staining source into the soil.

No evidence of fill, sheep dips, mines or contaminating industrial activities were identified at the site. No asbestos containing materials were identified on the site.

Soil samples were collected from the general site on an approximate 50m grid pattern. The soil samples were collected at the 0 to 100mm depth and evaluated for heavy metals. Additional samples were collected from potential locations considered areas of environmental concern (AEC) at the 50 to 100mm depth and evaluated for heavy metals and hydrocarbons.

Levels of heavy metals collected from across the general site were below the adopted thresholds for human health and environment.

Levels of zinc in three samples collected from adjacent structures in the western section exceeded the environmental investigation levels. Vegetation in the areas was not showing signs of impact from the elevated zinc levels. Other heavy metals were below adopted thresholds in all samples from areas of environmental concern.

Levels of TRH (C16-C34) exceeded adopted environmental screening levels in the sample collected from the dry drainage depression located along the southern boundary. The TRH is expected to be natural from degrading vegetation within the dam. Levels of other hydrocarbons in samples collected from areas of environmental concern were below adopted thresholds.

14.2 Assumptions in reaching the conclusions

It is assumed the sampling sites are representative of the site. An accurate history has been obtained and typical past farming practices were adopted.

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' with a radius of approximately 30m and with a 95% level of confidence.

Soil beneath concrete slabs were not assessed.

14.4 Suitability for proposed use of the site

The site is suitable for residential land-use.

14.5 Limitations and constraints on the use of the site

Nil

14.6 Recommendation for further work

Additional assessment should be undertaken following removal of the structures in the western section to confirm suitability for residential land-use.

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.

16. References

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)

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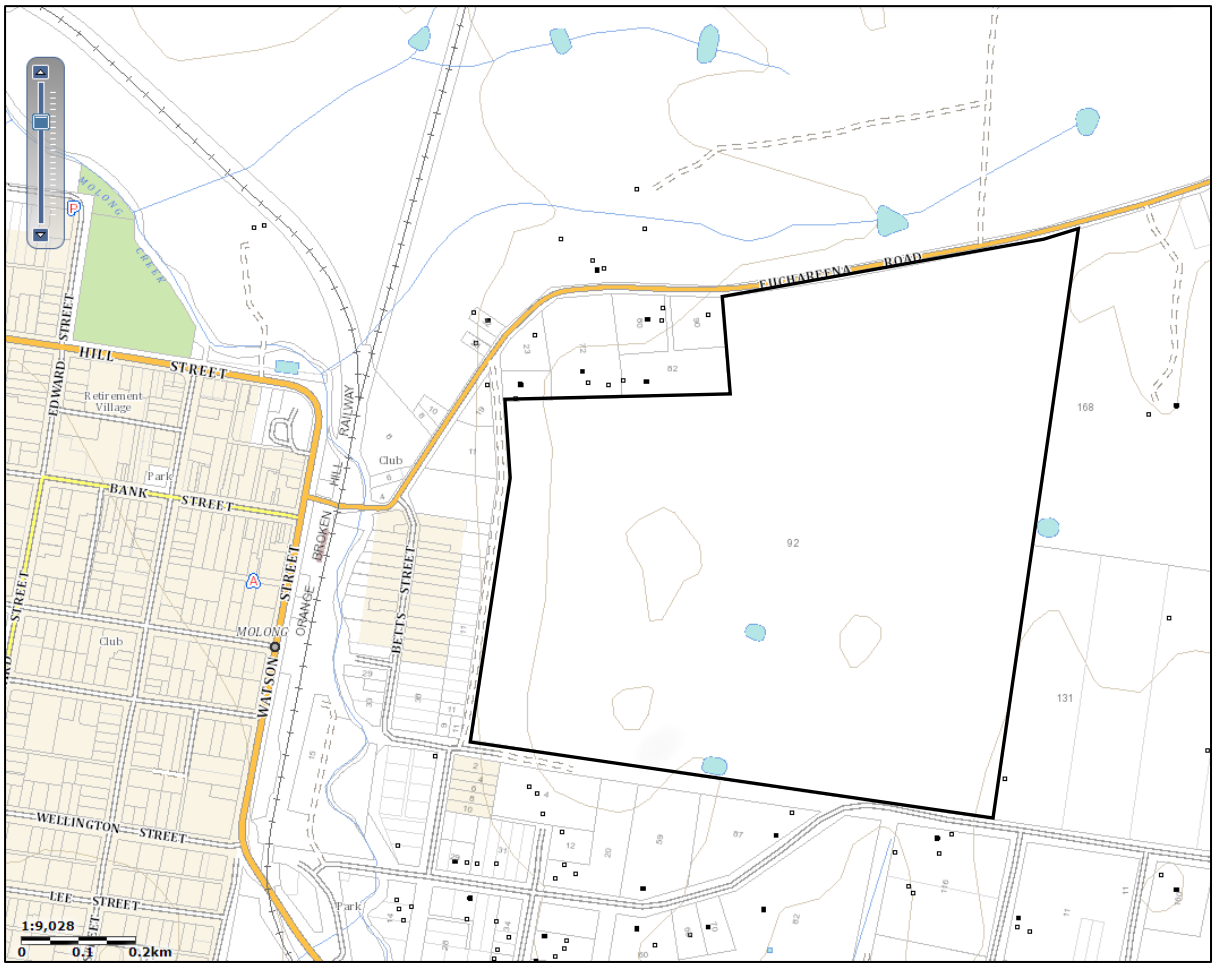
eSpadev2 (https://www.environment.nsw.gov.au/eSpade2WebApp)

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

State Government of NSW and Department of Regional New South Wales (2015) *Naturally occurring asbestos,* viewed September 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 September 2022 (datasets.seed.nsw.gov.au/dataset/ acid-sulfate-soils-risk0196c)

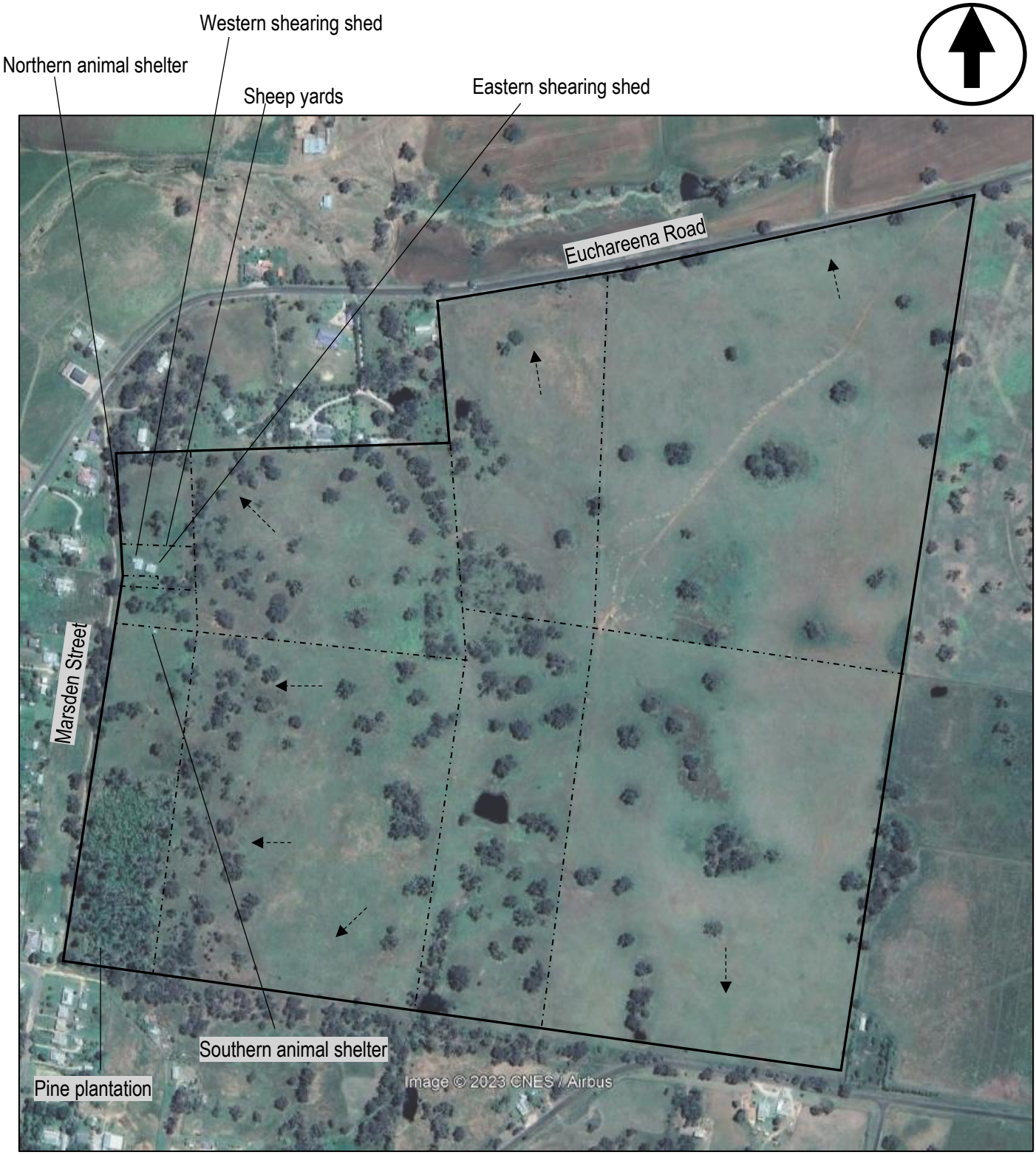
Figures



Legend

—— Investigation area

Figure 1. Site locality		
92 Euchareena Road, Molong NSW		
	Envirowest Consulting Pty Ltd	
Job: R13592c1	Drawn by: LD	Date: 14/12/2022



Legend

Investigation area

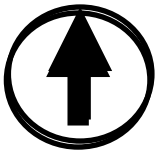
Fence

Slope

Approximate Scale 1: 6,600

0 66 132 264m

Figure 2. Aerial image and site layout		
92 Euchareena Road, Molong NSW		
	Envirowest Consulting Pty Ltd	
Job: R13592c1	Drawn by: LD	Date: 11/1/2023



Legend

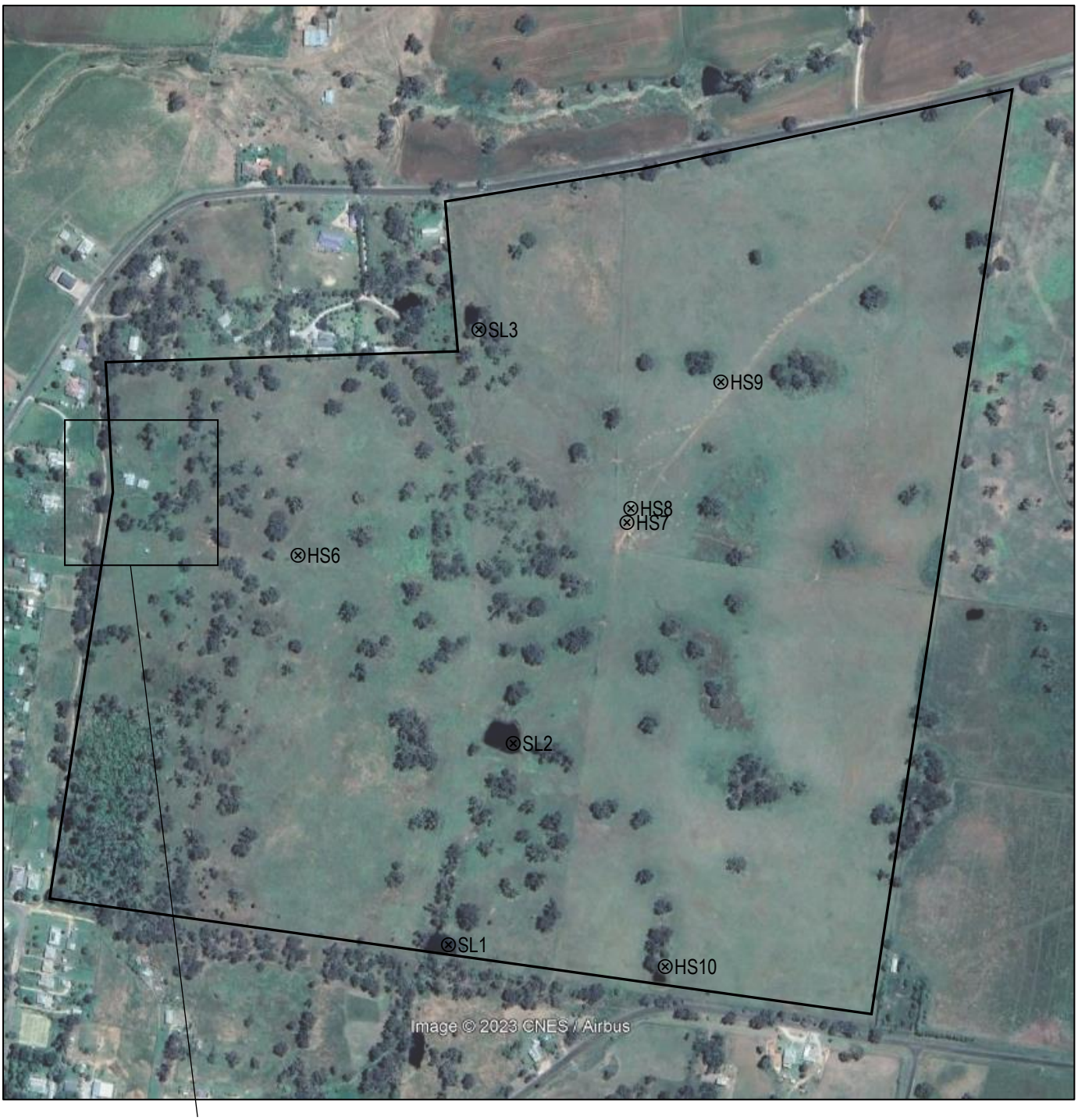
Investigation area

Sampling location

Approximate Scale 1: 2500

0 25 50 100m

Figure 3. Aerial image (2022) and general site sampling locations		
92 Euchareena Road, Molong NSW		
	Envirowest Consulting Pty Ltd	
Job: R13592c1	Drawn by: LD	Date: 07/09/2022



Legend

Investigation area

⊗ Sampling location

Approximate Scale 1: 6,600

0 66 132 264m

Figure 4. Areas of environmental concern sampling locations		
92 Euchareena Road, Molong NSW		
	Envirowest Consulting Pty Ltd	
Job: R13592c1	Drawn by: LD	Date: 11/1/2023

Legend

—— Investigation area

⊗ Sampling location

Approximate Scale 1: 900

0 9 18 36m

Figure 5. Areas of environmental concern, sheds sampling locations		
92 Euchareena Road, Molong NSW		
	Envirowest Consulting Pty Ltd	
Job: R13592c1	Drawn by: LD	Date: 11/1/2023

Figure 6. Photographs of the site

General site

General site

General site

General site

General site

General site

General site

Truck and tank in central section of site

Transportable yards in central site of site

Eastern shearing shed

Internal are of eastern shearing shed

Western shearing shed

Storage area in western shearing shed

Stained area in western shearing shed

Internal area of western shearing shed

Storage are in western shearing shed

Pens associated with western shearing shed

Internal area of northern animal shelter

Milking area in northern animal shelter

Internal area of southern animal shelter

Bare are in central northern section of site

Drainage depression along southern boundary

Restricted access to pine plantation

Restricted access to pine plantation

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. Inter laboratory duplicates will be one sample per batch.
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 60% RPD for levels greater than 10 times the PQL 85% RPD for levels between 5 to 10 times the PQL 100% RPD at levels between 2 to 5 times the PQL Absolute difference, 3.5 times the PQL where levels are, 2 times PQL

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

Five analysis batches were undertaken over the preliminary investigation program. Samples were collected on 27 and 28 October and 17 November 2022. A total of 329 samples were submitted for analytical testing. The samples were collected in the field by an environmental scientist from Envirowest Consulting Pty Ltd, placed into laboratory prepared receptacles as recommended in NEPM (1999). The samples preservation and storage was undertaken using standard industry practices. A chain of custody form accompanied transport of the samples to the laboratory.

The samples were analysed at the laboratories of SGS laboratories, Alexandria NSW which is 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
GC1, GC2, GC3, GC4, GC5, GC6, GC7, GC8, GC9, GC10, GC11, GC12, GC13, GC14, GC15, GC16, GC17, GC18, GC19, GC20, GC21, GC22, GC23, GC24, GC25, GC26, GC27, GC28, GC29, GC30, GC31, GC32, GC33, GC34, GC35, GC36, GC37, GC38, GC39, GC40, GC41, GC42, GC43, GC44, GC45, GC46, GC47, GC48, GC49, GC50, GC51, GC52, GC53, GC54, GC55, GC56, GC57, GC58, GC59, GC60, GC61, GC62, GC63, GC64, GC65, GC66, GC67, GC68, GC69, GC70, GC71, GC72, GC73, GC74, GC75, GC76, GC77, GC78, GC79, GC80, GC81, GC82, GC83, GC84, GC85, GC86, GC87, GC88, GC89, GC90, GC91, GC92, GC93, GC94, GC95	95	6	Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni), zinc (Zn)	27/10/2022	Soil	SE238483
HS1, HS2, HS3, HS4, HS5, HS6, HS7, HS8	8	0	As, Cd, Cr, Cu, Pb, Ni, Zn, mercury (Hg), Total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN),	27/10/2022	Soil	SE238486

			polycyclic aromatic hydrocarbons (PAH)			
GC96, GC97, GC98 GC99, GC100, GC101, GC102, GC103, GC104, GC105, GC106, GC107, GC108, GC113, GC114, GC115, GC116, GC117, GC121, GC122, GC123, GC124, GC125, GC126, GC127, GC128, GC129, GC130, GC131, GC132, GC133, GC134, GC135, GC136, GC137, GC138, GC139, GC140, GC141, GC142, GC143, GC144, GC145, GC146, GC147, GC148, GC149, GC150, GC151, GC152, GC153, GC154, GC155, GC156, GC157, GC158, GC159, GC160, GC161, GC162, GC163, GC164, GC165, GC166, GC167, GC168, GC169, GC170, GC171, GC172, GC173, GC174, GC175, GC176, GC177, GC178, GC179, GC180, GC181, GC182, GC183, GC184, GC185, GC186, GC187, GC188, GC189, GC190, GC191, GC192, GC193, GC194, GC195, GC196, GC197, GC198, GC199, GC200, GC201, GC202, GC203, GC204, GC205, GC206, GC207, GC208, GC209, GC210, GC211, GC212, GC213, GC214, GC215, GC216, GC217, GC218, GC219, GC220, GC221, GC222, GC223, GC224, GC225, GC226, GC227, GC228, GC230, GC231, GC232, GC233, GC234, GC235, GC236, GC237, GC238, GC239, GC240, GC241, GC242, GC243, GC244, GC245, GC246, GC247, GC248, GC249, GC250, GC251, GC252, GC253, GC254, GC255, GC256, GC257, GC258, GC259, GC260, GC261, GC262, GC263, GC264, GC265, GC266, GC267, GC268, GC269, GC270, GC271, GC272, GC273, GC274, GC275, GC276, GC277,	210	10	As, Cd, Cr, Cu, Pb, Ni, Zn	28/10/2022	Soil	SE238484, SE238485, SE238486

GC278, GC279, GC280, GC281, GC282, GC283, GC284, GC285, GC286, GC287, GC288, GC289, GC290, GC291, GC292, GC293, GC294, GC295, GC296, GC297, GC298, GC299, GC300, GC301, GC302, GC303, GC304, GC305, GC306, GC307, GC308, GC309, GC310, GC311, GC312, GC313						
SL1, SL2, SL3	3	0	As, Cd, Cr, Cu, Pb, Ni, Zn, OCP	28/10/2022	Soil	SE238486
HS9, HS10	2	0	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH	28/10/2022	Soil	SE238486
GC229	1	0	As, Cd, Cr, Cu, Pb, Ni, Zn	17/11/2022	Soil	SE239262

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
TRH(C6-C9)	USPEA SW846-5030A	USPEA SW 846-8260B
TRH(C10-C40), PAH	Tumbler extraction of solids	USEPA SW 846-8270B
PCB	Tumbler extraction of solids	USEPA SW 846-8270B
BTEX	Tumbler extraction of solids	USEPA SW 846-8260B
OC Pesticides	Tumbler extraction of solids	USEPA SW 846-8270B

3. Field quality assurance and quality control

Seventeen intra laboratory duplicate sample was collected for the investigation. The frequency was 5% which was in accordance 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
GC1, GC2, GC3, GC4, GC5, GC6, GC7, GC8, GC9, GC10, GC11, GC12, GC13, GC14, GC15, GC16, GC17, GC18, GC19, GC20, GC21, GC22, GC23, GC24, GC25, GC26, GC27, GC28, GC29, GC30, GC31, GC32, GC33, GC34, GC35, GC36, GC37, GC38, GC39, GC40, GC41, GC42, GC43, GC44, GC45, GC46, GC47, GC48, GC49, GC50, GC51, GC52, GC53, GC54, GC55, GC56, GC57, GC58, GC59, GC60, GC61, GC62, GC63, GC64, GC65, GC66, GC67, GC68, GC69, GC70, GC71, GC72, GC73, GC74, GC75, GC76, GC77, GC78, GC79, GC80, GC81	103	7	7	27/10/2022	Soil	SE238483 SE238486

GC82, GC83, GC84, GC85, GC86, GC87, GC88, GC89, GC90, GC91, GC92, GC93, GC94, GC95, HS1, HS2, HS3, HS4, HS5, HS6, HS7, HS8						
GC96, GC97, GC98, GC99, GC100, GC101, GC102, GC103, GC104, GC105, GC106, GC107, GC108, GC113, GC114, GC115, GC116, GC117, GC121, GC122, GC123, GC124, GC125, GC126, GC127, GC128, GC129, GC130, GC131, GC132, GC133, GC134, GC135, GC136, GC137, GC138, GC139, GC140, GC141, GC142, GC143, GC144, GC145, GC146, GC147, GC148, GC149, GC150, GC151, GC152, GC153, GC154, GC155, GC156, GC157, GC158, GC159, GC160, GC161, GC162, GC163, GC164, GC165, GC166, GC167, GC168, GC169, GC170, GC171, GC172, GC173, GC174, GC175, GC176, GC177, GC178, GC179, GC180, GC181, GC182, GC183, GC184, GC185, GC186, GC187, GC188, GC189, GC190, GC191, GC192, GC193, GC194, GC195, GC196, GC197, GC198, GC199, GC200, GC201, GC202, GC203, GC204, GC205, GC206, GC207, GC208, GC209, GC210, GC211, GC212, GC213, GC214, GC215, GC216, GC217, GC218, GC219, GC220, GC221, GC222, GC223, GC224, GC225, GC226, GC227, GC228, GC230, GC231, GC232, GC233, GC234, GC235, GC236, GC237, GC238, GC239, GC240, GC241, GC242, GC243, GC244, GC245, GC246, GC247, GC248, GC249, GC250, GC251, GC252, GC253, GC254, GC255, GC256, GC257, GC258, GC259, GC260, GC261, GC262, GC263, GC264, GC265, GC266, GC267, GC268, GC269, GC270, GC271, GC272, GC273, GC274, GC275, GC276, GC277, GC278, GC279, GC280, GC281, GC282, GC283, GC284, GC285, GC286, GC287, GC288, GC289, GC290, GC291, GC292, GC293, GC294, GC295, GC296, GC297, GC298, GC299, GC300, GC301, GC302, GC303, GC304, GC305, GC306, GC307, GC308, GC309, GC310, GC311, GC312, GC313, SL1, SL2, SL3, HS9, HS10	215	10	5	28/10/2022	Soil	SE238484, SE238485, SE238486
GC229	1	0	-	17/11/2022	Soil	SE239262

Table A1. Relative differences for intra laboratory duplicates

	GC8	DA1	Relative difference (%)	Pass/Fail	GC21	DA2	Relative difference (%)	Pass/Fail
Arsenic	2	2	0	Pass	4	3	28.6	Pass
Cadmium	<0.3	<0.3	NA	Pass	<0.3	<0.3	NA	Pass
Chromium (total)	2.7	2.5	7.7	Pass	3.1	2.5	21.4	Pass
Copper	8.2	5.7	35.9	Fail	6.1	5.5	10.3	Pass
Lead	4	4	0	Pass	3	3	0	Pass
Nickel	1.5	1.2	22.2	Pass	1.5	1.3	14.3	Pass
Zinc	16	14	13.3	Pass	17	14	19.4	Pass

NA – relative difference unable to be calculated as results are less than laboratory detection limit, [1] Result less than 5 times the detection limit, [2] where an exceedance has occurred the higher result was used in the results

	GC41	DA3	Relative difference (%)	Pass/Fail	GC61	DA4	Relative difference (%)	Pass/Fail
Arsenic	3	4	28.6	Pass	6	6	0	Pass
Cadmium	<0.3	<0.3	NA	Pass	<0.3	<0.3	NA	Pass
Chromium (total)	7.3	8.9	19.8	Pass	32	35	9.0	Pass
Copper	8.7	9.7	10.9	Pass	37	35	5.6	Pass
Lead	4	4	0	Pass	6	9	40	Fail
Nickel	2.5	2.9	14.8	Pass	11	11	0	Pass
Zinc	22	20	9.5	Pass	50	56	11.3	Pass

NA – relative difference unable to be calculated as results are less than laboratory detection limit, [1] Result less than 5 times the detection limit, [2] where an exceedance has occurred the higher result was used in the results

	GC81	DA5	Relative difference (%)	Pass/Fail	GC101	DA6	Relative difference (%)	Pass/Fail
Arsenic	2	3	40	Pass[1]	2	2	0	Pass
Cadmium	<0.3	<0.3	NA	Pass	<0.3	<0.3	NA	Pass
Chromium (total)	2.8	3.1	10.2	Pass	2.7	2.6	3.8	Pass
Copper	5.6	6.1	8.5	Pass	5.8	5.7	1.7	Pass
Lead	4	4	0	Pass	5	4	22.2	Pass
Nickel	1.2	1.3	8.0	Pass	1.4	1.3	7.4	Pass
Zinc	19	26	31.1	Fail	19	17	11.1	Pass

NA – relative difference unable to be calculated as results are less than laboratory detection limit, [1] Result less than 5 times the detection limit, [2] where an exceedance has occurred the higher result was used in the results

	GC121	DA7	Relative difference (%)	Pass/Fail	GC141	DA8	Relative difference (%)	Pass/Fail
Arsenic	6	5	18.2	Pass	5	5	0	Pass
Cadmium	<0.3	<0.3	NA	Pass	<0.3	<0.3	NA	-
Chromium (total)	75	66	12.8	Pass	45	44	2.2	Pass
Copper	57	49	15.1	Pass	31	32	3.2	Pass
Lead	9	9	0	Pass	5	5	0	Pass
Nickel	18	17	5.7	Pass	11	11	0	Pass
Zinc	34	33	3.0	Pass	40	40	0	Pass

NA – relative difference unable to be calculated as results are less than laboratory detection limit, [1] Result less than 5 times the detection limit, [2] where an exceedance has occurred the higher result was used in the results

	GC161	DA9	Relative difference (%)	Pass/Fail	GC197	DA10	Relative difference (%)	Pass/Fail
Arsenic	6	6	0	Pass	10	10	0	Pass
Cadmium	<0.3	<0.3	NA	Pass	<0.3	<0.3	NA	Pass
Chromium (total)	19	21	10.0	Pass	25	23	8.3	Pass
Copper	37	40	7.8	Pass	73	70	4.2	Pass
Lead	8	8	0	Pass	9	9	0	Pass
Nickel	8.5	8.7	2.3	Pass	12	12	0	Pass
Zinc	53	55	3.7	Pass	70	69	1.4	Pass

NA – relative difference unable to be calculated as results are less than laboratory detection limit, [1] Result less than 5 times the detection limit, [2] where an exceedance has occurred the higher result was used in the results

	GC201	DA11	Relative difference (%)	Pass/Fail	GC221	DA12	Relative difference (%)	Pass/Fail
Arsenic	15	15	0	Pass	16	14	13.3	Pass
Cadmium	<0.3	<0.3	NA	Pass	<0.3	<0.3	NA	Pass
Chromium (total)	25	26	3.9	Pass	30	25	18.2	Pass
Copper	80	83	3.7	Pass	77	70	9.5	Pass
Lead	6	6	0	Pass	7	6	15.4	Pass
Nickel	12	13	8	Pass	14	12	15.4	Pass
Zinc	57	65	13.1	Pass	57	53	7.3	Pass

NA – relative difference unable to be calculated as results are less than laboratory detection limit, [1] Result less than 5 times the detection limit, [2] where an exceedance has occurred the higher result was used in the results

	GC241	DA13	Relative difference (%)	Pass/Fail	GC261	DA14	Relative difference (%)	Pass/Fail
Arsenic	9	11	20.0	Pass	6	5	18.2	Pass
Cadmium	<0.3	<0.3	NA	Pass	<0.3	<0.3	NA	Pass
Chromium (total)	38	41	7.6	Pass	33	34	3.0	Pass
Copper	58	65	11.4	Pass	53	54	1.9	Pass
Lead	8	9	11.8	Pass	10	9	10.5	Pass
Nickel	16	19	17.1	Pass	16	15	6.5	Pass
Zinc	57	63	10	Pass	48	47	2.1	Pass

NA – relative difference unable to be calculated as results are less than laboratory detection limit, [1] Result less than 5 times the detection limit, [2] where an exceedance has occurred the higher result was used in the results

	GC281	DA15	Relative difference (%)	Pass/Fail	GC301	DA16	Relative difference (%)	Pass/Fail
Arsenic	6	6	0	Pass	5	5	0	Pass
Cadmium	<0.3	<0.3	NA	Pass	<0.3	<0.3	NA	Pass
Chromium (total)	34	35	2.9	Pass	22	25	12.8	Pass
Copper	57	60	5.1	Pass	41	42	2.4	Pass
Lead	5	6	18.2	Pass	9	8	11.8	Pass
Nickel	19	18	5.4	Pass	11	12	8.7	Pass
Zinc	50	51	2.0	Pass	51	54	5.7	Pass

NA – relative difference unable to be calculated as results are less than laboratory detection limit, [1] Result less than 5 times the detection limit, [2] where an exceedance has occurred the higher result was used in the results

	HS10	DA17	Relative difference (%)	Pass/Fail
Arsenic	35	10	35	Fail
Cadmium	<0.3	<0.3	NA	Pass
Chromium (total)	51	22	51	Fail
Copper	57	61	26	Pass
Lead	6	7	33	Fail
Nickel	11	10	29	Pass
Zinc	63	48	21	Pass

NA – relative difference unable to be calculated as results are less than laboratory detection limit, [1] Result less than 5 times the detection limit, [2] where an exceedance has occurred the higher result was used in the results

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 NEPM (1999). The time between collection and extraction was generally less than the criteria listed below:

Analyte	Maximum holding time
Metals	6 months
Mercury	28 days
BTEXN, TRH, PAH, OCP, OPP	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. Outliers exist for moisture in SE238483 with analysis 1 day over due. 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)

5.1 Completeness

A measure of the amount of usable data for a data collection activity (total to be greater than 90%)

5.1.1 Field

Consideration	Accepted	Comment
Locations to be sampled	Yes	In accordance with sampling methodology, described in the report.
SOP appropriate and compiled	Yes	In accordance with sampling methodology
Experienced sampler	Yes	Environmental scientist
Documentation correct	Yes	Chain of custody completed

5.1.2 Laboratory

Consideration	Accepted	Comment
Samples analysed	Yes	In accordance with chain of custody and analysis plan.
Analytes	Yes	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
Sample holding times	Yes	Metals < 6 months Mercury < 28 days OCP, OPP, PAH, TRH, PCB, BTEXN < 14 days

5.2 Comparability

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

5.2.1 Field

Consideration	Accepted	Comment
SOP	Yes	Same sampling procedures used and sampled on one date
Experienced sampler	Yes	Experienced environmental scientist
Climatic conditions	Yes	Sampling log
Samples collected	Yes	Suitable size and storage

5.2.2 Laboratory

Consideration	Accepted	Comment
Analytical methods	Yes	Same methods all samples
PQL	Yes	Suitable for analytes
Same laboratory	Yes	-
Same units	Yes	-

5.3 Representativeness

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

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. 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)

5.4.1 Field

Consideration	Accepted	Comment
SOP	Yes	Complied
Field duplicates	Yes	Collected

5.4.2 Laboratory

Consideration	Accepted	Comment
Laboratory duplicates	Yes	Frequency of 5%, results to be within +/-40% or discussion required
Field duplicates (intra and inter laboratory)	Yes	Frequency of 5%, results to be within +/-30% or discussion required. Two duplicates exceeded the adopted RPD. Higher result reported. No expected to impact on conclusions.
Laboratory prepared volatile trip spikes	NA	Frequency of 5%, results to be within +/-30% or discussion required.

5.5 Accuracy

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

5.5.1 Field

Consideration	**Accepted**	**Comment**
SOP	Yes	Complied
Field blanks	No	Not collected

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 (SE238483, SE238484, SE238486). Recovery failed acceptance criteria due to sample heterogeneity (SE238486).
Matrix duplicates	No	Frequency of 5%, results to be within +/-40% or discussion required. Recovery failed acceptance criteria due to sample heterogeneity (SE238486).
Surrogate spikes	Yes	Frequency of 5%, results to be within +/-40% or discussion required.
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	Wakefield Ashurst Development Pty Limited
Contact	Brent Annis Brown
Job number	13592-1 and 13592-4
Location	92 Euchareena Road, Molong NSW
Date	27 October 2022
Investigator	Felipe Canavez
Weather conditions	Rainy and overcast

Sample ID	Matrix	Date	Analysis required	Observations/comments
GC1	Soil	27/10/2022	Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), Nickel (Ni), zinc (Zn)	
GC2	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC3	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC4	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC5	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC6	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC7	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC8	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC9	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC10	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC11	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC12	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC13	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC14	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC15	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC16	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC17	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC18	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC19	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC20	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC21	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC22	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC23	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC24	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC25	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC26	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC27	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC28	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC29	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC30	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC31	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC32	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC33	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC34	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC35	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC36	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC37	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC38	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC39	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC40	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC41	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC42	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC43	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC44	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	

GC45	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC46	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC47	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC48	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC49	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC50	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC51	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC52	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC53	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC54	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC55	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC56	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC57	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC58	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC59	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC60	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC61	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC62	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC63	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC64	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC65	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC66	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC67	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC68	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC69	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC70	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC71	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC72	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC73	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC74	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC75	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC76	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC77	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC78	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC79	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC80	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC81	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC82	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC83	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC84	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC85	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC86	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC87	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC88	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC89	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC90	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC91	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC92	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC93	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC94	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC95	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
HS1	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn, mercury (Hg), total recoverable hydrocarbons (TRH (C6-C40)), benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAH)	Stock pen
HS2	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH	Surface drain from shed
HS3	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH	South west of shed, flow direction of surface water
HS4	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH	Small shed 1
HS5	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH	Small shed 2

HS6	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH	Disturbed soil
HS7	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH	Beneath fuel tank on back of truck
HS8	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH	Truck engine bay
DA1	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC8
DA2	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC21
DA3	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC41
DA4	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC61
DA5	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC81

Sampling log

Client	Wakefield Ashurst Development Pty Limited
Contact	Brent Annis Brown
Job number	13592-2, 13592-3, 13592-4
Location	92 Euchareena Road, Molong NSW
Date	28 October 2022
Investigator	Felipe Canavez
Weather conditions	Warm and fine

Sample ID	Matrix	Date	Analysis required	Observations/comments
GC96	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC97	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC98	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC99	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC100	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC101	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC102	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC103	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC104	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC105	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC106	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC107	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC108	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC113	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC114	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC115	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC116	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC117	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC121	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC122	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC123	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC124	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC125	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC126	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC127	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC128	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC129	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC130	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC131	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC132	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC133	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC134	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC135	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC136	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC137	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC138	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC139	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC140	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC141	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC142	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC143	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC144	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC145	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC146	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC147	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC148	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC149	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC150	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	

GC151	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC152	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC153	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC154	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC155	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC156	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC157	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC158	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC159	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC160	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC161	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC162	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC163	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC164	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC165	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC166	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC167	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC168	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC169	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC170	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC171	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC172	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC173	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC174	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC175	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC176	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC177	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC178	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC179	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC180	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC181	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC182	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC183	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC184	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC185	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC186	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC187	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC188	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC189	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC190	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC191	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC192	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC193	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC194	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC195	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC196	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC197	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC198	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC199	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC200	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC201	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC202	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC203	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC204	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC205	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC206	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC207	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC208	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC209	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC210	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	

GC211	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC212	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC213	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC214	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC215	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC216	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC217	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC218	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC219	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC220	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC221	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC222	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC223	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC224	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC225	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC226	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC227	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC228	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC230	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC231	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC232	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC233	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC234	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC235	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC236	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC237	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC238	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC239	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC240	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC241	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC242	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC243	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC244	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC245	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC246	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC247	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC248	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC249	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC250	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC251	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC252	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC253	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC254	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC255	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC256	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC257	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC258	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC259	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC260	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC261	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC262	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC263	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC264	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC265	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC266	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC267	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC268	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC269	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC270	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC271	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	

GC272	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC273	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC274	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC275	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC276	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC277	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC278	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC279	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC280	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC281	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC282	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC283	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC284	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC285	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC286	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC287	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC288	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC289	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC290	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC291	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC292	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC293	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC294	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC295	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC296	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC297	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC298	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC299	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC300	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC301	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC302	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC303	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC304	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC305	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC306	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC307	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC308	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC309	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC310	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC311	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC312	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
GC313	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	
SL1	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn, organochlorine pesticides (OCP)	Southern dam
SL2	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn, OCP	Central dam
SL3	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn, OCP	Northern dam
HS9	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH	Bare area
HS10	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH	Dry drainage depression
DA6	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC101
DA7	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC121
DA8	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC141
DA9	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC161
DA10	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC197
DA11	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC201
DA12	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC221
DA13	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC241
DA14	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC261
DA15	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC281
DA16	Soil	28/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn	Duplicate of GC301
DA17	Soil	27/10/2022	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	Duplicate of HS10

Sampling log

Client	Wakefield Ashurst Development Pty Limited
Contact	Brent Annis Brown
Job number	13592-5
Location	92 Euchareena Road, Molong NSW
Date	17 November 2022
Investigator	Felipe Canavez
Weather conditions	Warm and fine

Sample ID	Matrix	Date	Analysis required	Observations/comments
GC229	Soil	17/11/2022	Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), Nickel (Ni), zinc (Zn)	

Appendix 3. Soil analysis results – SGS report number SE238483, SE238484, SE238485, SE238486, SE239262 and chain of custody forms

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	61 2 63614954
Facsimile	(Not specified)
Email	felipe@envirowest.net.au
Project	**13592-1**
Order Number	**13592-1**
Samples	100

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE238483 R0**
Date Received	1/11/2022
Date Reported	11/11/2022

COMMENTS

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

SIGNATORIES

Kamrul AHSAN
Senior Chemist

Shane MCDERMOTT
Inorganic/Metals Chemist

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 2/11/2022

PARAMETER	UOM	LOR	GC1 SOIL - 27/10/2022 SE238483.001	GC2 SOIL - 27/10/2022 SE238483.002	GC3 SOIL - 27/10/2022 SE238483.003	GC4 SOIL - 27/10/2022 SE238483.004	GC5 SOIL - 27/10/2022 SE238483.005
Arsenic, As	mg/kg	1	5	9	3	3	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	10	11	3.8	4.0	3.6
Copper, Cu	mg/kg	0.5	16	13	8.8	8.9	7.9
Lead, Pb	mg/kg	1	5	7	5	5	5
Nickel, Ni	mg/kg	0.5	3.8	3.7	2.2	2.2	1.9
Zinc, Zn	mg/kg	2	24	24	29	28	28

PARAMETER	UOM	LOR	GC6 SOIL - 27/10/2022 SE238483.006	GC7 SOIL - 27/10/2022 SE238483.007	GC8 SOIL - 27/10/2022 SE238483.008	GC9 SOIL - 27/10/2022 SE238483.009	GC10 SOIL - 27/10/2022 SE238483.010
Arsenic, As	mg/kg	1	3	3	2	4	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	3.4	3.4	2.7	3.2	4.6
Copper, Cu	mg/kg	0.5	7.5	7.7	8.2	6.6	7.3
Lead, Pb	mg/kg	1	5	5	4	5	5
Nickel, Ni	mg/kg	0.5	1.7	1.6	1.5	1.4	1.8
Zinc, Zn	mg/kg	2	25	22	16	22	18

PARAMETER	UOM	LOR	GC11 SOIL - 27/10/2022 SE238483.011	GC12 SOIL - 27/10/2022 SE238483.012	GC13 SOIL - 27/10/2022 SE238483.013	GC14 SOIL - 27/10/2022 SE238483.014	GC15 SOIL - 27/10/2022 SE238483.015
Arsenic, As	mg/kg	1	7	6	5	8	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	16	21	27	22	10
Copper, Cu	mg/kg	0.5	39	28	37	35	15
Lead, Pb	mg/kg	1	4	6	6	4	4
Nickel, Ni	mg/kg	0.5	6.4	9.1	9.1	9.0	3.6
Zinc, Zn	mg/kg	2	43	36	37	30	21

PARAMETER	UOM	LOR	GC16 SOIL - 27/10/2022 SE238483.016	GC17 SOIL - 27/10/2022 SE238483.017	GC18 SOIL - 27/10/2022 SE238483.018	GC19 SOIL - 27/10/2022 SE238483.019	GC20 SOIL - 27/10/2022 SE238483.020
Arsenic, As	mg/kg	1	3	5	3	2	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	3.4	4.7	2.6	3.4	3.2
Copper, Cu	mg/kg	0.5	6.4	6.4	7.5	6.4	7.0
Lead, Pb	mg/kg	1	4	4	4	4	4
Nickel, Ni	mg/kg	0.5	1.6	2.2	1.5	1.6	1.5
Zinc, Zn	mg/kg	2	23	21	20	23	19

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 2/11/2022

(continued)

PARAMETER	UOM	LOR	GC21 SOIL - 27/10/2022 SE238483.021	GC22 SOIL - 27/10/2022 SE238483.022	GC23 SOIL - 27/10/2022 SE238483.023	GC24 SOIL - 27/10/2022 SE238483.024	GC25 SOIL - 27/10/2022 SE238483.025
Arsenic, As	mg/kg	1	4	6	5	5	12
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	3.1	4.5	4.5	27	16
Copper, Cu	mg/kg	0.5	6.1	7.6	11	41	43
Lead, Pb	mg/kg	1	3	4	5	4	3
Nickel, Ni	mg/kg	0.5	1.5	2.3	2.6	11	7.3
Zinc, Zn	mg/kg	2	17	13	28	36	38

PARAMETER	UOM	LOR	GC26 SOIL - 27/10/2022 SE238483.026	GC27 SOIL - 27/10/2022 SE238483.027	GC28 SOIL - 27/10/2022 SE238483.028	GC29 SOIL - 27/10/2022 SE238483.029	GC30 SOIL - 27/10/2022 SE238483.030
Arsenic, As	mg/kg	1	3	10	5	3	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	6.6	3.8	5.5	4.5	3.8
Copper, Cu	mg/kg	0.5	11	6.2	6.9	6.6	7.5
Lead, Pb	mg/kg	1	4	4	5	4	5
Nickel, Ni	mg/kg	0.5	2.3	1.9	3.6	2.4	2.0
Zinc, Zn	mg/kg	2	21	14	18	20	23

PARAMETER	UOM	LOR	GC31 SOIL - 27/10/2022 SE238483.031	GC32 SOIL - 27/10/2022 SE238483.032	GC33 SOIL - 27/10/2022 SE238483.033	GC34 SOIL - 27/10/2022 SE238483.034	GC35 SOIL - 27/10/2022 SE238483.035
Arsenic, As	mg/kg	1	3	3	3	3	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	3.8	4.3	4.2	3.5	20
Copper, Cu	mg/kg	0.5	7.3	6.5	7.4	6.7	38
Lead, Pb	mg/kg	1	6	4	5	5	11
Nickel, Ni	mg/kg	0.5	2.1	1.9	2.8	1.4	5.8
Zinc, Zn	mg/kg	2	20	19	24	16	28

PARAMETER	UOM	LOR	GC36 SOIL - 27/10/2022 SE238483.036	GC37 SOIL - 27/10/2022 SE238483.037	GC38 SOIL - 27/10/2022 SE238483.038	GC39 SOIL - 27/10/2022 SE238483.039	GC40 SOIL - 27/10/2022 SE238483.040
Arsenic, As	mg/kg	1	5	3	4	4	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	18	35	25	11	16
Copper, Cu	mg/kg	0.5	15	38	27	11	19
Lead, Pb	mg/kg	1	5	4	4	5	6
Nickel, Ni	mg/kg	0.5	5.3	15	9.9	3.2	4.8
Zinc, Zn	mg/kg	2	40	48	45	19	23

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 2/11/2022

(continued)

PARAMETER	UOM	LOR	GC41 SOIL - 27/10/2022 SE238483.041	GC42 SOIL - 27/10/2022 SE238483.042	GC43 SOIL - 27/10/2022 SE238483.043	GC44 SOIL - 27/10/2022 SE238483.044	GC45 SOIL - 27/10/2022 SE238483.045
Arsenic, As	mg/kg	1	3	3	3	2	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	7.3	5.3	4.7	2.1	3.4
Copper, Cu	mg/kg	0.5	8.7	7.2	6.3	6.2	4.2
Lead, Pb	mg/kg	1	4	4	4	6	6
Nickel, Ni	mg/kg	0.5	2.5	2.7	2.3	1.3	1.8
Zinc, Zn	mg/kg	2	22	22	20	20	13

PARAMETER	UOM	LOR	GC46 SOIL - 27/10/2022 SE238483.046	GC47 SOIL - 27/10/2022 SE238483.047	GC48 SOIL - 27/10/2022 SE238483.048	GC49 SOIL - 27/10/2022 SE238483.049	GC50 SOIL - 28/10/2022 SE238483.050
Arsenic, As	mg/kg	1	3	2	2	3	8
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	5.0	3.5	3.3	4.1	48
Copper, Cu	mg/kg	0.5	4.2	5.0	4.5	10	50
Lead, Pb	mg/kg	1	11	4	3	4	4
Nickel, Ni	mg/kg	0.5	2.1	1.8	1.7	2.3	21
Zinc, Zn	mg/kg	2	17	18	18	31	63

PARAMETER	UOM	LOR	GC51 SOIL - 28/10/2022 SE238483.051	GC52 SOIL - 28/10/2022 SE238483.052	GC53 SOIL - 28/10/2022 SE238483.053	GC54 SOIL - 28/10/2022 SE238483.054	GC55 SOIL - 28/10/2022 SE238483.055
Arsenic, As	mg/kg	1	3	4	3	5	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	39	48	26	36	41
Copper, Cu	mg/kg	0.5	38	51	35	40	31
Lead, Pb	mg/kg	1	4	4	4	3	5
Nickel, Ni	mg/kg	0.5	12	16	13	17	17
Zinc, Zn	mg/kg	2	55	59	62	59	53

PARAMETER	UOM	LOR	GC56 SOIL - 28/10/2022 SE238483.056	GC57 SOIL - 28/10/2022 SE238483.057	GC58 SOIL - 28/10/2022 SE238483.058	GC59 SOIL - 28/10/2022 SE238483.059	GC60 SOIL - 27/10/2022 SE238483.060
Arsenic, As	mg/kg	1	4	4	6	8	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	55	31	39	35	8.1
Copper, Cu	mg/kg	0.5	34	31	37	51	8.8
Lead, Pb	mg/kg	1	6	4	5	6	5
Nickel, Ni	mg/kg	0.5	20	15	13	17	2.7
Zinc, Zn	mg/kg	2	67	53	45	59	21

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 2/11/2022

(continued)

PARAMETER	UOM	LOR	GC61 SOIL - 27/10/2022 SE238483.061	GC62 SOIL - 27/10/2022 SE238483.062	GC63 SOIL - 27/10/2022 SE238483.063	GC64 SOIL - 27/10/2022 SE238483.064	GC65 SOIL - 27/10/2022 SE238483.065
Arsenic, As	mg/kg	1	6	5	5	2	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	32	17	7.4	4.0	3.6
Copper, Cu	mg/kg	0.5	37	17	8.2	5.6	5.0
Lead, Pb	mg/kg	1	6	5	4	4	4
Nickel, Ni	mg/kg	0.5	11	5.5	2.4	2.1	1.8
Zinc, Zn	mg/kg	2	50	39	22	23	23

PARAMETER	UOM	LOR	GC66 SOIL - 27/10/2022 SE238483.066	GC67 SOIL - 28/10/2022 SE238483.067	GC68 SOIL - 27/10/2022 SE238483.068	GC69 SOIL - 27/10/2022 SE238483.069	GC70 SOIL - 27/10/2022 SE238483.070
Arsenic, As	mg/kg	1	3	4	4	2	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	3.5	25	4.0	3.3	3.6
Copper, Cu	mg/kg	0.5	5.6	34	5.2	4.2	3.9
Lead, Pb	mg/kg	1	4	7	5	5	4
Nickel, Ni	mg/kg	0.5	1.6	9.2	1.8	1.5	1.5
Zinc, Zn	mg/kg	2	18	41	19	15	13

PARAMETER	UOM	LOR	GC71 SOIL - 27/10/2022 SE238483.071	GC72 SOIL - 27/10/2022 SE238483.072	GC73 SOIL - 27/10/2022 SE238483.073	GC74 SOIL - 27/10/2022 SE238483.074	GC75 SOIL - 27/10/2022 SE238483.075
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	4.1	2.9	2.1	4.9	5.9
Copper, Cu	mg/kg	0.5	6.0	4.5	4.6	4.1	6.6
Lead, Pb	mg/kg	1	5	4	4	4	5
Nickel, Ni	mg/kg	0.5	2.1	1.3	1.2	1.7	1.9
Zinc, Zn	mg/kg	2	17	15	13	12	18

PARAMETER	UOM	LOR	GC76 SOIL - 27/10/2022 SE238483.076	GC77 SOIL - 27/10/2022 SE238483.077	GC78 SOIL - 27/10/2022 SE238483.078	GC79 SOIL - 27/10/2022 SE238483.079	GC80 SOIL - 27/10/2022 SE238483.080
Arsenic, As	mg/kg	1	7	3	2	4	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	23	14	6.7	8.9	2.7
Copper, Cu	mg/kg	0.5	24	6.2	5.2	5.2	4.6
Lead, Pb	mg/kg	1	5	5	4	5	4
Nickel, Ni	mg/kg	0.5	7.2	2.2	1.8	3.4	1.2
Zinc, Zn	mg/kg	2	32	14	16	10	14

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 2/11/2022

(continued)

PARAMETER	UOM	LOR	GC81 SOIL - 27/10/2022 SE238483.081	GC82 SOIL - 27/10/2022 SE238483.082	GC83 SOIL - 27/10/2022 SE238483.083	GC84 SOIL - 27/10/2022 SE238483.084	GC85 SOIL - 27/10/2022 SE238483.085
Arsenic, As	mg/kg	1	2	3	3	2	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	2.8	5.5	4.2	4.5	3.2
Copper, Cu	mg/kg	0.5	5.6	4.2	3.7	3.8	6.9
Lead, Pb	mg/kg	1	4	4	4	4	4
Nickel, Ni	mg/kg	0.5	1.2	2.7	1.5	1.8	1.7
Zinc, Zn	mg/kg	2	19	14	14	12	17

PARAMETER	UOM	LOR	GC86 SOIL - 27/10/2022 SE238483.086	GC87 SOIL - 27/10/2022 SE238483.087	GC88 SOIL - 27/10/2022 SE238483.088	GC89 SOIL - 27/10/2022 SE238483.089	GC90 SOIL - 27/10/2022 SE238483.090
Arsenic, As	mg/kg	1	2	3	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	1.9	5.0	4.0	3.7	4.1
Copper, Cu	mg/kg	0.5	4.5	6.5	4.1	6.0	6.8
Lead, Pb	mg/kg	1	4	4	4	4	5
Nickel, Ni	mg/kg	0.5	1.1	2.7	1.7	1.5	2.2
Zinc, Zn	mg/kg	2	14	19	14	17	17

PARAMETER	UOM	LOR	GC91 SOIL - 27/10/2022 SE238483.091	GC92 SOIL - 27/10/2022 SE238483.092	GC93 SOIL - 27/10/2022 SE238483.093	GC94 SOIL - 27/10/2022 SE238483.094	GC95 SOIL - 27/10/2022 SE238483.095
Arsenic, As	mg/kg	1	5	2	2	2	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	8.2	3.8	3.3	2.3	3.1
Copper, Cu	mg/kg	0.5	14	4.9	5.3	4.5	5.8
Lead, Pb	mg/kg	1	4	4	5	4	5
Nickel, Ni	mg/kg	0.5	3.2	1.4	1.5	1.1	1.9
Zinc, Zn	mg/kg	2	23	12	17	12	22

PARAMETER	UOM	LOR	DA1 SOIL - 27/10/2022 SE238483.096	DA2 SOIL - 27/10/2022 SE238483.097	DA3 SOIL - 27/10/2022 SE238483.098	DA4 SOIL - 27/10/2022 SE238483.099	DA5 SOIL - 27/10/2022 SE238483.100
Arsenic, As	mg/kg	1	2	3	4	6	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	2.5	2.5	8.9	35	3.1
Copper, Cu	mg/kg	0.5	5.7	5.5	9.7	35	6.1
Lead, Pb	mg/kg	1	4	3	4	9	4
Nickel, Ni	mg/kg	0.5	1.2	1.3	2.9	11	1.3
Zinc, Zn	mg/kg	2	14	14	20	56	26

Moisture Content [AN002] Tested: 2/11/2022

PARAMETER	UOM	LOR	GC1 SOIL - 27/10/2022 SE238483.001	GC2 SOIL - 27/10/2022 SE238483.002	GC3 SOIL - 27/10/2022 SE238483.003	GC4 SOIL - 27/10/2022 SE238483.004	GC5 SOIL - 27/10/2022 SE238483.005
% Moisture	%w/w	1	23.3	37.0	37.3	30.2	19.1

PARAMETER	UOM	LOR	GC6 SOIL - 27/10/2022 SE238483.006	GC7 SOIL - 27/10/2022 SE238483.007	GC8 SOIL - 27/10/2022 SE238483.008	GC9 SOIL - 27/10/2022 SE238483.009	GC10 SOIL - 27/10/2022 SE238483.010
% Moisture	%w/w	1	23.3	23.7	20.6	22.6	24.3

PARAMETER	UOM	LOR	GC11 SOIL - 27/10/2022 SE238483.011	GC12 SOIL - 27/10/2022 SE238483.012	GC13 SOIL - 27/10/2022 SE238483.013	GC14 SOIL - 27/10/2022 SE238483.014	GC15 SOIL - 27/10/2022 SE238483.015
% Moisture	%w/w	1	22.0	35.5	28.2	20.5	21.0

PARAMETER	UOM	LOR	GC16 SOIL - 27/10/2022 SE238483.016	GC17 SOIL - 27/10/2022 SE238483.017	GC18 SOIL - 27/10/2022 SE238483.018	GC19 SOIL - 27/10/2022 SE238483.019	GC20 SOIL - 27/10/2022 SE238483.020
% Moisture	%w/w	1	22.5	17.7	24.2	19.8	18.1

PARAMETER	UOM	LOR	GC21 SOIL - 27/10/2022 SE238483.021	GC22 SOIL - 27/10/2022 SE238483.022	GC23 SOIL - 27/10/2022 SE238483.023	GC24 SOIL - 27/10/2022 SE238483.024	GC25 SOIL - 27/10/2022 SE238483.025
% Moisture	%w/w	1	19.3	21.1	27.5	20.0	26.0

PARAMETER	UOM	LOR	GC26 SOIL - 27/10/2022 SE238483.026	GC27 SOIL - 27/10/2022 SE238483.027	GC28 SOIL - 27/10/2022 SE238483.028	GC29 SOIL - 27/10/2022 SE238483.029	GC30 SOIL - 27/10/2022 SE238483.030
% Moisture	%w/w	1	21.8	15.4	29.6	23.6	23.7

PARAMETER	UOM	LOR	GC31 SOIL - 27/10/2022 SE238483.031	GC32 SOIL - 27/10/2022 SE238483.032	GC33 SOIL - 27/10/2022 SE238483.033	GC34 SOIL - 27/10/2022 SE238483.034	GC35 SOIL - 27/10/2022 SE238483.035
% Moisture	%w/w	1	20.1	19.2	25.0	17.6	26.9

Moisture Content [AN002] Tested: 2/11/2022 (continued)

PARAMETER	UOM	LOR	GC36 SOIL - 27/10/2022 SE238483.036	GC37 SOIL - 27/10/2022 SE238483.037	GC38 SOIL - 27/10/2022 SE238483.038	GC39 SOIL - 27/10/2022 SE238483.039	GC40 SOIL - 27/10/2022 SE238483.040
% Moisture	%w/w	1	21.5	27.4	31.4	28.3	24.0

PARAMETER	UOM	LOR	GC41 SOIL - 27/10/2022 SE238483.041	GC42 SOIL - 27/10/2022 SE238483.042	GC43 SOIL - 27/10/2022 SE238483.043	GC44 SOIL - 27/10/2022 SE238483.044	GC45 SOIL - 27/10/2022 SE238483.045
% Moisture	%w/w	1	21.6	26.4	23.9	26.3	13.9

PARAMETER	UOM	LOR	GC46 SOIL - 27/10/2022 SE238483.046	GC47 SOIL - 27/10/2022 SE238483.047	GC48 SOIL - 27/10/2022 SE238483.048	GC49 SOIL - 27/10/2022 SE238483.049	GC50 SOIL - 28/10/2022 SE238483.050
% Moisture	%w/w	1	27.7	42.9	25.3	31.5	36.7

PARAMETER	UOM	LOR	GC51 SOIL - 28/10/2022 SE238483.051	GC52 SOIL - 28/10/2022 SE238483.052	GC53 SOIL - 28/10/2022 SE238483.053	GC54 SOIL - 28/10/2022 SE238483.054	GC55 SOIL - 28/10/2022 SE238483.055
% Moisture	%w/w	1	27.9	25.8	28.5	27.3	25.9

PARAMETER	UOM	LOR	GC56 SOIL - 28/10/2022 SE238483.056	GC57 SOIL - 28/10/2022 SE238483.057	GC58 SOIL - 28/10/2022 SE238483.058	GC59 SOIL - 28/10/2022 SE238483.059	GC60 SOIL - 27/10/2022 SE238483.060
% Moisture	%w/w	1	31.2	31.1	37.6	27.1	30.9

PARAMETER	UOM	LOR	GC61 SOIL - 27/10/2022 SE238483.061	GC62 SOIL - 27/10/2022 SE238483.062	GC63 SOIL - 27/10/2022 SE238483.063	GC64 SOIL - 27/10/2022 SE238483.064	GC65 SOIL - 27/10/2022 SE238483.065
% Moisture	%w/w	1	49.3	33.0	32.1	31.9	22.8

PARAMETER	UOM	LOR	GC66 SOIL - 27/10/2022 SE238483.066	GC67 SOIL - 28/10/2022 SE238483.067	GC68 SOIL - 27/10/2022 SE238483.068	GC69 SOIL - 27/10/2022 SE238483.069	GC70 SOIL - 27/10/2022 SE238483.070
% Moisture	%w/w	1	32.1	24.4	27.0	18.3	22.5

Moisture Content [AN002] Tested: 2/11/2022 (continued)

PARAMETER	UOM	LOR	GC71 SOIL - 27/10/2022 SE238483.071	GC72 SOIL - 27/10/2022 SE238483.072	GC73 SOIL - 27/10/2022 SE238483.073	GC74 SOIL - 27/10/2022 SE238483.074	GC75 SOIL - 27/10/2022 SE238483.075
% Moisture	%w/w	1	32.8	27.9	24.8	31.0	32.4

PARAMETER	UOM	LOR	GC76 SOIL - 27/10/2022 SE238483.076	GC77 SOIL - 27/10/2022 SE238483.077	GC78 SOIL - 27/10/2022 SE238483.078	GC79 SOIL - 27/10/2022 SE238483.079	GC80 SOIL - 27/10/2022 SE238483.080
% Moisture	%w/w	1	42.5	25.3	28.3	24.5	21.4

PARAMETER	UOM	LOR	GC81 SOIL - 27/10/2022 SE238483.081	GC82 SOIL - 27/10/2022 SE238483.082	GC83 SOIL - 27/10/2022 SE238483.083	GC84 SOIL - 27/10/2022 SE238483.084	GC85 SOIL - 27/10/2022 SE238483.085
% Moisture	%w/w	1	25.9	31.8	15.8	17.7	27.4

PARAMETER	UOM	LOR	GC86 SOIL - 27/10/2022 SE238483.086	GC87 SOIL - 27/10/2022 SE238483.087	GC88 SOIL - 27/10/2022 SE238483.088	GC89 SOIL - 27/10/2022 SE238483.089	GC90 SOIL - 27/10/2022 SE238483.090
% Moisture	%w/w	1	26.1	29.0	28.8	27.6	33.2

PARAMETER	UOM	LOR	GC91 SOIL - 27/10/2022 SE238483.091	GC92 SOIL - 27/10/2022 SE238483.092	GC93 SOIL - 27/10/2022 SE238483.093	GC94 SOIL - 27/10/2022 SE238483.094	GC95 SOIL - 27/10/2022 SE238483.095
% Moisture	%w/w	1	29.7	22.8	36.1	28.5	36.5

PARAMETER	UOM	LOR	DA1 SOIL - 27/10/2022 SE238483.096	DA2 SOIL - 27/10/2022 SE238483.097	DA3 SOIL - 27/10/2022 SE238483.098	DA4 SOIL - 27/10/2022 SE238483.099	DA5 SOIL - 27/10/2022 SE238483.100
% Moisture	%w/w	1	22.1	20.6	21.6	47.8	30.5

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.

FOOTNOTES

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

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

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

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

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

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

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

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

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

STATEMENT OF QA/QC PERFORMANCE

SE238483 R0

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	61 2 63614954
Facsimile	(Not specified)
Email	felipe@envirowest.net.au
Project	**13592-1**
Order Number	**13592-1**
Samples	100

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE238483 R0**
Date Received	01 Nov 2022
Date Reported	11 Nov 2022

COMMENTS

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

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

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

Analysis Date	Moisture Content	39 items
Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	3 items

SAMPLE SUMMARY

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	100 Soil
Date documentation received	1/11/2022	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	14.5°C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

HOLDING TIME SUMMARY

SE238483 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)-[ENV]AN002**

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC1	SE238483.001	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC2	SE238483.002	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC3	SE238483.003	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC4	SE238483.004	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC5	SE238483.005	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC6	SE238483.006	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC7	SE238483.007	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC8	SE238483.008	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC9	SE238483.009	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC10	SE238483.010	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC11	SE238483.011	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC12	SE238483.012	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC13	SE238483.013	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC14	SE238483.014	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC15	SE238483.015	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC16	SE238483.016	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC17	SE238483.017	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC18	SE238483.018	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC19	SE238483.019	LB262482	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	03 Nov 2022
GC20	SE238483.020	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC21	SE238483.021	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC22	SE238483.022	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC23	SE238483.023	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC24	SE238483.024	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC25	SE238483.025	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC26	SE238483.026	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC27	SE238483.027	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC28	SE238483.028	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC29	SE238483.029	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC30	SE238483.030	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC31	SE238483.031	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC32	SE238483.032	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC33	SE238483.033	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC34	SE238483.034	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC35	SE238483.035	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC36	SE238483.036	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC37	SE238483.037	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC38	SE238483.038	LB262512	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC39	SE238483.039	LB262513	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC40	SE238483.040	LB262513	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC41	SE238483.041	LB262513	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC42	SE238483.042	LB262513	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC43	SE238483.043	LB262513	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC44	SE238483.044	LB262513	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC45	SE238483.045	LB262513	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC46	SE238483.046	LB262513	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC47	SE238483.047	LB262513	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC48	SE238483.048	LB262513	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC49	SE238483.049	LB262513	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC50	SE238483.050	LB262513	28 Oct 2022	01 Nov 2022	11 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC51	SE238483.051	LB262513	28 Oct 2022	01 Nov 2022	11 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC52	SE238483.052	LB262513	28 Oct 2022	01 Nov 2022	11 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC53	SE238483.053	LB262513	28 Oct 2022	01 Nov 2022	11 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC54	SE238483.054	LB262513	28 Oct 2022	01 Nov 2022	11 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC55	SE238483.055	LB262513	28 Oct 2022	01 Nov 2022	11 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC56	SE238483.056	LB262513	28 Oct 2022	01 Nov 2022	11 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC57	SE238483.057	LB262513	28 Oct 2022	01 Nov 2022	11 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC58	SE238483.058	LB262513	28 Oct 2022	01 Nov 2022	11 Nov 2022	02 Nov 2022	07 Nov 2022	07 Nov 2022
GC59	SE238483.059	LB262514	28 Oct 2022	01 Nov 2022	11 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC60	SE238483.060	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†

HOLDING TIME SUMMARY

SE238483 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 (continued) — **Method: ME-(AU)-[ENV]AN002**

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC61	SE238483.061	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC62	SE238483.062	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC63	SE238483.063	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC64	SE238483.064	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC65	SE238483.065	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC66	SE238483.066	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC67	SE238483.067	LB262514	28 Oct 2022	01 Nov 2022	11 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC68	SE238483.068	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC69	SE238483.069	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC70	SE238483.070	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC71	SE238483.071	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC72	SE238483.072	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC73	SE238483.073	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC74	SE238483.074	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC75	SE238483.075	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC76	SE238483.076	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC77	SE238483.077	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC78	SE238483.078	LB262514	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC79	SE238483.079	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC80	SE238483.080	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC81	SE238483.081	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC82	SE238483.082	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC83	SE238483.083	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC84	SE238483.084	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC85	SE238483.085	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC86	SE238483.086	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC87	SE238483.087	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC88	SE238483.088	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC89	SE238483.089	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC90	SE238483.090	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC91	SE238483.091	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC92	SE238483.092	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC93	SE238483.093	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC94	SE238483.094	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
GC95	SE238483.095	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
DA1	SE238483.096	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
DA2	SE238483.097	LB262515	27 Oct 2022	01 Nov 2022	10 Nov 2022	02 Nov 2022	07 Nov 2022	08 Nov 2022†
DA3	SE238483.098	LB262961	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
DA4	SE238483.099	LB262961	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
DA5	SE238483.100	LB262961	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC1	SE238483.001	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC2	SE238483.002	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC3	SE238483.003	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC4	SE238483.004	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC5	SE238483.005	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC6	SE238483.006	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC7	SE238483.007	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC8	SE238483.008	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC9	SE238483.009	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC10	SE238483.010	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC11	SE238483.011	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC12	SE238483.012	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC13	SE238483.013	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC14	SE238483.014	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC15	SE238483.015	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC16	SE238483.016	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC17	SE238483.017	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC18	SE238483.018	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC19	SE238483.019	LB262480	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	03 Nov 2022
GC20	SE238483.020	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC21	SE238483.021	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC22	SE238483.022	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC23	SE238483.023	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC24	SE238483.024	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC25	SE238483.025	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC26	SE238483.026	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC27	SE238483.027	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC28	SE238483.028	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC29	SE238483.029	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC30	SE238483.030	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC31	SE238483.031	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC32	SE238483.032	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC33	SE238483.033	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC34	SE238483.034	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC35	SE238483.035	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC36	SE238483.036	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC37	SE238483.037	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC38	SE238483.038	LB262486	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC39	SE238483.039	LB262487	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC40	SE238483.040	LB262487	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC41	SE238483.041	LB262487	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC42	SE238483.042	LB262487	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC43	SE238483.043	LB262487	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC44	SE238483.044	LB262487	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC45	SE238483.045	LB262487	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC46	SE238483.046	LB262487	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC47	SE238483.047	LB262487	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC48	SE238483.048	LB262487	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC49	SE238483.049	LB262487	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	07 Nov 2022
GC50	SE238483.050	LB262487	28 Oct 2022	01 Nov 2022	26 Apr 2023	02 Nov 2022	26 Apr 2023	07 Nov 2022
GC51	SE238483.051	LB262487	28 Oct 2022	01 Nov 2022	26 Apr 2023	02 Nov 2022	26 Apr 2023	07 Nov 2022
GC52	SE238483.052	LB262487	28 Oct 2022	01 Nov 2022	26 Apr 2023	02 Nov 2022	26 Apr 2023	07 Nov 2022
GC53	SE238483.053	LB262487	28 Oct 2022	01 Nov 2022	26 Apr 2023	02 Nov 2022	26 Apr 2023	07 Nov 2022
GC54	SE238483.054	LB262487	28 Oct 2022	01 Nov 2022	26 Apr 2023	02 Nov 2022	26 Apr 2023	07 Nov 2022
GC55	SE238483.055	LB262487	28 Oct 2022	01 Nov 2022	26 Apr 2023	02 Nov 2022	26 Apr 2023	07 Nov 2022
GC56	SE238483.056	LB262487	28 Oct 2022	01 Nov 2022	26 Apr 2023	02 Nov 2022	26 Apr 2023	07 Nov 2022
GC57	SE238483.057	LB262487	28 Oct 2022	01 Nov 2022	26 Apr 2023	02 Nov 2022	26 Apr 2023	07 Nov 2022
GC58	SE238483.058	LB262487	28 Oct 2022	01 Nov 2022	26 Apr 2023	02 Nov 2022	26 Apr 2023	07 Nov 2022
GC59	SE238483.059	LB262488	28 Oct 2022	01 Nov 2022	26 Apr 2023	02 Nov 2022	26 Apr 2023	08 Nov 2022
GC60	SE238483.060	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC61	SE238483.061	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC62	SE238483.062	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC63	SE238483.063	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC64	SE238483.064	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC65	SE238483.065	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC66	SE238483.066	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC67	SE238483.067	LB262488	28 Oct 2022	01 Nov 2022	26 Apr 2023	02 Nov 2022	26 Apr 2023	08 Nov 2022
GC68	SE238483.068	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC69	SE238483.069	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC70	SE238483.070	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC71	SE238483.071	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC72	SE238483.072	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC73	SE238483.073	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC74	SE238483.074	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC75	SE238483.075	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC76	SE238483.076	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC77	SE238483.077	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC78	SE238483.078	LB262488	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC79	SE238483.079	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC80	SE238483.080	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC81	SE238483.081	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC82	SE238483.082	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC83	SE238483.083	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC84	SE238483.084	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC85	SE238483.085	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC86	SE238483.086	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC87	SE238483.087	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC88	SE238483.088	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC89	SE238483.089	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC90	SE238483.090	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC91	SE238483.091	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC92	SE238483.092	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC93	SE238483.093	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC94	SE238483.094	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
GC95	SE238483.095	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
DA1	SE238483.096	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
DA2	SE238483.097	LB262490	27 Oct 2022	01 Nov 2022	25 Apr 2023	02 Nov 2022	25 Apr 2023	08 Nov 2022
DA3	SE238483.098	LB262946	27 Oct 2022	01 Nov 2022	25 Apr 2023	07 Nov 2022	25 Apr 2023	11 Nov 2022
DA4	SE238483.099	LB262946	27 Oct 2022	01 Nov 2022	25 Apr 2023	07 Nov 2022	25 Apr 2023	11 Nov 2022
DA5	SE238483.100	LB262946	27 Oct 2022	01 Nov 2022	25 Apr 2023	07 Nov 2022	25 Apr 2023	11 Nov 2022

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

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

No surrogates were required for this job.

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

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

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

Sample Number	Parameter	Units	LOR	Result
LB262480.001	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
LB262486.001	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
LB262487.001	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
LB262488.001	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
LB262490.001	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
LB262946.001	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

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

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

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

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

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

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238483.010	LB262482.011	% Moisture	%w/w	1	24.3	24.3	34	0
SE238483.019	LB262482.021	% Moisture	%w/w	1	19.8	20.6	35	4
SE238483.029	LB262512.011	% Moisture	%w/w	1	23.6	21.8	34	8
SE238483.038	LB262512.021	% Moisture	%w/w	1	31.4	25.6	34	21
SE238483.048	LB262513.011	% Moisture	%w/w	1	25.3	24.4	34	4
SE238483.058	LB262513.022	% Moisture	%w/w	1	37.6	36.4	33	3
SE238483.068	LB262514.011	% Moisture	%w/w	1	27.0	24.4	34	10
SE238483.078	LB262514.022	% Moisture	%w/w	1	28.3	30.4	33	7
SE238483.088	LB262515.011	% Moisture	%w/w	1	28.8	27.9	34	3
SE238483.097	LB262515.021	% Moisture	%w/w	1	20.6	20.0	35	3
SE238484.102	LB262961.011	% Moisture	%w/w	1	28.6	26.7	34	7
SE238485.008	LB262961.021	% Moisture	%w/w	1	27.2	24.4	34	11

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 %
SE238483.010	LB262480.014	Arsenic, As	mg/kg	1	4	4	56	1
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	4.6	4.1	42	11
		Copper, Cu	mg/kg	0.5	7.3	7.2	37	2
		Nickel, Ni	mg/kg	0.5	1.8	1.8	58	2
		Lead, Pb	mg/kg	1	5	4	55	27
		Zinc, Zn	mg/kg	2	18	18	41	3
SE238483.019	LB262480.024	Arsenic, As	mg/kg	1	2	2	77	9
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	3.4	3.1	45	10
		Copper, Cu	mg/kg	0.5	6.4	6.3	38	1
		Nickel, Ni	mg/kg	0.5	1.6	1.6	61	1
		Lead, Pb	mg/kg	1	4	4	54	8
		Zinc, Zn	mg/kg	2	23	22	39	3
SE238483.029	LB262486.014	Arsenic, As	mg/kg	1	3	3	61	5
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	4.5	4.3	41	5
		Copper, Cu	mg/kg	0.5	6.6	6.3	38	5
		Nickel, Ni	mg/kg	0.5	2.4	2.4	51	0
		Lead, Pb	mg/kg	1	4	4	56	5
		Zinc, Zn	mg/kg	2	20	20	40	0
SE238483.038	LB262486.024	Arsenic, As	mg/kg	1	4	5	52	3
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	25	28	32	11
		Copper, Cu	mg/kg	0.5	27	31	32	16
		Nickel, Ni	mg/kg	0.5	9.9	11	35	10
		Lead, Pb	mg/kg	1	4	4	55	3
		Zinc, Zn	mg/kg	2	45	46	34	3
SE238483.048	LB262487.014	Arsenic, As	mg/kg	1	2	2	86	10
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	3.3	3.3	45	0
		Copper, Cu	mg/kg	0.5	4.5	4.5	41	0
		Nickel, Ni	mg/kg	0.5	1.7	1.6	60	3
		Lead, Pb	mg/kg	1	3	3	61	14
		Zinc, Zn	mg/kg	2	18	18	41	0
SE238483.068	LB262488.014	Arsenic, As	mg/kg	1	4	4	56	13
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	4.0	3.9	43	1
		Copper, Cu	mg/kg	0.5	5.2	5.3	39	1
		Nickel, Ni	mg/kg	0.5	1.8	1.8	58	0
		Lead, Pb	mg/kg	1	5	5	50	7
		Zinc, Zn	mg/kg	2	19	19	41	2
SE238483.088	LB262490.014	Arsenic, As	mg/kg	1	2	2	86	15
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	4.0	4.1	42	3
		Copper, Cu	mg/kg	0.5	4.1	4.1	42	1

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

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

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

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

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

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238483.088	LB262490.014	Nickel, Ni	mg/kg	0.5	1.7	1.7	60	1
		Lead, Pb	mg/kg	1	4	3	59	5
		Zinc, Zn	mg/kg	2	14	14	44	4
SE238483.097	LB262490.024	Arsenic, As	mg/kg	1	3	3	62	1
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	2.5	2.7	49	6
		Copper, Cu	mg/kg	0.5	5.5	5.8	39	5
		Nickel, Ni	mg/kg	0.5	1.3	1.5	66	12
		Lead, Pb	mg/kg	1	3	3	66	6
		Zinc, Zn	mg/kg	2	14	14	44	3
SE238484.102	LB262946.014	Arsenic, As	mg/kg	1	6	6	46	1
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	21	19	33	9
		Copper, Cu	mg/kg	0.5	40	38	31	5
		Nickel, Ni	mg/kg	0.5	8.7	8.2	36	5
		Lead, Pb	mg/kg	1	8	8	42	2
		Zinc, Zn	mg/kg	2	55	54	34	3
SE238485.008	LB262946.024	Arsenic, As	mg/kg	1	11	12	39	9
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	21	23	32	8
		Copper, Cu	mg/kg	0.5	55	61	31	10
		Nickel, Ni	mg/kg	0.5	7.9	8.7	36	9
		Lead, Pb	mg/kg	1	6	6	47	8
		Zinc, Zn	mg/kg	2	50	49	34	2

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB262480.002	Arsenic, As	mg/kg	1	300	318.22	80 - 120	93
	Cadmium, Cd	mg/kg	0.3	5.1	4.81	70 - 130	105
	Chromium, Cr	mg/kg	0.5	33	38.31	80 - 120	87
	Copper, Cu	mg/kg	0.5	290	290	80 - 120	100
	Nickel, Ni	mg/kg	0.5	170	187	80 - 120	91
	Lead, Pb	mg/kg	1	86	89.9	80 - 120	95
	Zinc, Zn	mg/kg	2	260	273	80 - 120	94
LB262486.002	Arsenic, As	mg/kg	1	300	318.22	80 - 120	94
	Cadmium, Cd	mg/kg	0.3	5.0	4.81	70 - 130	104
	Chromium, Cr	mg/kg	0.5	36	38.31	80 - 120	94
	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	84	89.9	80 - 120	94
	Zinc, Zn	mg/kg	2	260	273	80 - 120	95
LB262487.002	Arsenic, As	mg/kg	1	310	318.22	80 - 120	98
	Cadmium, Cd	mg/kg	0.3	4.8	4.81	70 - 130	99
	Chromium, Cr	mg/kg	0.5	36	38.31	80 - 120	94
	Copper, Cu	mg/kg	0.5	290	290	80 - 120	101
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	95
	Lead, Pb	mg/kg	1	85	89.9	80 - 120	94
	Zinc, Zn	mg/kg	2	260	273	80 - 120	95
LB262488.002	Arsenic, As	mg/kg	1	310	318.22	80 - 120	98
	Cadmium, Cd	mg/kg	0.3	4.8	4.81	70 - 130	101
	Chromium, Cr	mg/kg	0.5	35	38.31	80 - 120	92
	Copper, Cu	mg/kg	0.5	290	290	80 - 120	101
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	95
	Lead, Pb	mg/kg	1	85	89.9	80 - 120	95
	Zinc, Zn	mg/kg	2	260	273	80 - 120	95
LB262490.002	Arsenic, As	mg/kg	1	300	318.22	80 - 120	95
	Cadmium, Cd	mg/kg	0.3	4.6	4.81	70 - 130	96
	Chromium, Cr	mg/kg	0.5	33	38.31	80 - 120	87
	Copper, Cu	mg/kg	0.5	290	290	80 - 120	98
	Nickel, Ni	mg/kg	0.5	170	187	80 - 120	93
	Lead, Pb	mg/kg	1	84	89.9	80 - 120	93
	Zinc, Zn	mg/kg	2	250	273	80 - 120	93
LB262946.002	Arsenic, As	mg/kg	1	320	318.22	80 - 120	100
	Cadmium, Cd	mg/kg	0.3	4.0	4.81	70 - 130	83
	Chromium, Cr	mg/kg	0.5	38	38.31	80 - 120	99
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	105
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	98
	Lead, Pb	mg/kg	1	90	89.9	80 - 120	101
	Zinc, Zn	mg/kg	2	270	273	80 - 120	99

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

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

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE238483.001	LB262480.004	Arsenic, As	mg/kg	1	46	5	50	82
		Cadmium, Cd	mg/kg	0.3	39	<0.3	50	78
		Chromium, Cr	mg/kg	0.5	50	10	50	78
		Copper, Cu	mg/kg	0.5	56	16	50	80
		Nickel, Ni	mg/kg	0.5	45	3.8	50	83
		Lead, Pb	mg/kg	1	45	5	50	81
		Zinc, Zn	mg/kg	2	60	24	50	73
SE238483.020	LB262486.004	Arsenic, As	mg/kg	1	49	6	50	86
		Cadmium, Cd	mg/kg	0.3	42	<0.3	50	83
		Chromium, Cr	mg/kg	0.5	46	3.2	50	86
		Copper, Cu	mg/kg	0.5	51	7.0	50	89
		Nickel, Ni	mg/kg	0.5	45	1.5	50	87
		Lead, Pb	mg/kg	1	46	4	50	85
		Zinc, Zn	mg/kg	2	59	19	50	81
SE238483.039	LB262487.004	Arsenic, As	mg/kg	1	48	4	50	88
		Cadmium, Cd	mg/kg	0.3	43	<0.3	50	85
		Chromium, Cr	mg/kg	0.5	52	11	50	82
		Copper, Cu	mg/kg	0.5	54	11	50	86
		Nickel, Ni	mg/kg	0.5	47	3.2	50	87
		Lead, Pb	mg/kg	1	47	5	50	84
		Zinc, Zn	mg/kg	2	60	19	50	81
SE238483.059	LB262488.004	Arsenic, As	mg/kg	1	48	8	50	81
		Cadmium, Cd	mg/kg	0.3	42	<0.3	50	84
		Chromium, Cr	mg/kg	0.5	68	35	50	66 ④
		Copper, Cu	mg/kg	0.5	81	51	50	60 ④
		Nickel, Ni	mg/kg	0.5	54	17	50	74
		Lead, Pb	mg/kg	1	46	6	50	80
		Zinc, Zn	mg/kg	2	85	59	50	52 ④
SE238483.079	LB262490.004	Arsenic, As	mg/kg	1	48	4	50	87
		Cadmium, Cd	mg/kg	0.3	43	<0.3	50	86
		Chromium, Cr	mg/kg	0.5	52	8.9	50	87
		Copper, Cu	mg/kg	0.5	51	5.2	50	91
		Nickel, Ni	mg/kg	0.5	48	3.4	50	90
		Lead, Pb	mg/kg	1	48	5	50	85
		Zinc, Zn	mg/kg	2	54	10	50	88
SE238483.098	LB262946.004	Arsenic, As	mg/kg	1	48	4	50	88
		Cadmium, Cd	mg/kg	0.3	41	<0.3	50	83
		Chromium, Cr	mg/kg	0.5	52	8.9	50	85
		Copper, Cu	mg/kg	0.5	53	9.7	50	87
		Nickel, Ni	mg/kg	0.5	46	2.9	50	87
		Lead, Pb	mg/kg	1	47	4	50	84
		Zinc, Zn	mg/kg	2	62	20	50	83

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

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

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

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

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

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

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

Chain of Custody Form – Ref 13592-1

Ref:	**13592-1**
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800
Telephone:	(02) 6361 4954
Facsimile:	(02) 6360 3960
Email:	felipe@envirowest.net.au
Contact Person:	Felipe Canavez
Invoice:	accounts@envirowest.net.au
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015
Quotation #:	Envir_70119_2019
Courier/CN:	Grants Express

			Sample matrix			Sample preservation			Analysis				
									SGS Method Code				
									CL1T				
	Sample ID	Container*	Sampling Date/Time	Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)				
1	GC1	A	27/10/2022		X		X		X	X				
2	GC2	A	27/10/2022		X		X		X	X				
3	GC3	A	27/10/2022		X		X		X	X				
4	GC4	A	27/10/2022		X		X		X	X				
5	GC5	A	27/10/2022		X		X		X	X				
6	GC6	A	27/10/2022		X		X		X	X				
7	GC7	A	27/10/2022		X		X		X	X				
8	GC8	A	27/10/2022		X		X		X	X				
9	GC9	A	27/10/2022		X		X		X	X				
10	GC10	A	27/10/2022		X		X		X	X				
11	GC11	A	27/10/2022		X		X		X	X				
12	GC12	A	27/10/2022		X		X		X	X				
13	GC13	A	27/10/2022		X		X		X	X				
14	GC14	A	27/10/2022		X		X		X	X				
15	GC15	A	27/10/2022		X		X		X	X				
16	GC16	A	27/10/2022		X		X		X	X				
17	GC17	A	27/10/2022		X		X		X	X				

SGS EHS Sydney COC
SE238483

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler name: Felipe Canavez
Date: 31/10/2022 Time: 1400

Relinquished by: (print and signature)	Virginia Bragg	Date 31/10/2022	Time 1400	Received by: (print and signature)	Date 01/11/22 @ 7:10

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

Chain of Custody Form – Ref 13592-1

Ref:	**13592-1**	**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800							**SGS Method Code**					
Telephone:	(02) 6361 4954							**CL1T**					
Facsimile:	(02) 6360 3960												
Email:	felipe@envirowest.net.au												
Contact Person:	Felipe Canavez												
Invoice:	accounts@envirowest.net.au												
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015	Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)					
Quotation #:	Envir_70119_2019												
Courier/CN:	Grants Express												
Sample ID	**Container***	**Sampling Date/Time**											
18 GC18	A	27/10/2022		X		X		X	X				
19 GC19	A	27/10/2022		X		X		X	X				
20 GC20	A	27/10/2022		X		X		X	X				
21 GC21	A	27/10/2022		X		X		X	X				
22 GC22	A	27/10/2022		X		X		X	X				
23 GC23	A	27/10/2022		X		X		X	X				
24 GC24	A	27/10/2022		X		X		X	X				
25 GC25	A	27/10/2022		X		X		X	X				
26 GC26	A	27/10/2022		X		X		X	X				
27 GC27	A	27/10/2022		X		X		X	X				
28 GC28	A	27/10/2022		X		X		X	X				
29 GC29	A	27/10/2022		X		X		X	X				
30 GC30	A	27/10/2022		X		X		X	X				
31 GC31	A	27/10/2022		X		X		X	X				
32 GC32	A	27/10/2022		X		X		X	X				
33 GC33	A	27/10/2022		X		X		X	X				
34 GC34	A	27/10/2022		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: 31/10/2022 Time: 1400								
Relinquished by: (print and signature) Virginia Bragg		Date 31/10/2022		Time 1400	Received by: (print and signature)			Date 01/11/22	Time @ 7:10				

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

Chain of Custody Form – Ref 13592-1

Ref:	**13592-1**		**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**					
Telephone:	(02) 6361 4954								**CL1T**					
Facsimile:	(02) 6360 3960													
Email:	felipe@envirowest.net.au													
Contact Person:	Felipe Canavez													
Invoice:	accounts@envirowest.net.au													
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)					
Quotation #:	Envir_70119_2019													
Courier/CN:	Grants Express													
	Sample ID	**Container***	**Sampling Date/Time**											
35	GC35	A	27/10/2022		X		X		X	X				
36	GC36	A	27/10/2022		X		X		X	X				
37	GC37	A	27/10/2022		X		X		X	X				
38	GC38	A	27/10/2022		X		X		X	X				
39	GC39	A	27/10/2022		X		X		X	X				
40	GC40	A	27/10/2022		X		X		X	X				
41	GC41	A	27/10/2022		X		X		X	X				
42	GC42	A	27/10/2022		X		X		X	X				
43	GC43	A	27/10/2022		X		X		X	X				
44	GC44	A	27/10/2022		X		X		X	X				
45	GC45	A	27/10/2022		X		X		X	X				
46	GC46	A	27/10/2022		X		X		X	X				
47	GC47	A	27/10/2022		X		X		X	X				
48	GC48	A	27/10/2022		X		X		X	X				
49	GC49	A	27/10/2022		X		X		X	X				
50	GC50	A	28/10/2022		X		X		X	X				
51	GC51	A	28/10/2022		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: 31/10/2022 Time: 1400
Relinquished by: (print and signature) Virginia Bragg Date 31/10/2022 Time 1400	Received by: (print and signature) Date Time 01/11/22 @ 7:10

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

Chain of Custody Form – Ref 13592-1

Ref:	**13592-1**		**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**					
Telephone:	(02) 6361 4954								**CL1T**					
Facsimile:	(02) 6360 3960													
Email:	felipe@envirowest.net.au													
Contact Person:	Felipe Canavez													
Invoice:	accounts@envirowest.net.au													
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)					
Quotation #:	Envir_70119_2019													
Courier/CN:	Grants Express													
	Sample ID	**Container***	**Sampling Date/Time**											
52	GC52	A	28/10/2022		X		X		X	X				
53	GC53	A	28/10/2022		X		X		X	X				
54	GC54	A	28/10/2022		X		X		X	X				
55	GC55	A	28/10/2022		X		X		X	X				
56	GC56	A	28/10/2022		X		X		X	X				
57	GC57	A	28/10/2022		X		X		X	X				
58	GC58	A	28/10/2022		X		X		X	X				
59	GC59	A	28/10/2022		X		X		X	X				
60	GC60	A	27/10/2022		X		X		X	X				
61	GC61	A	27/10/2022		X		X		X	X				
62	GC62	A	27/10/2022		X		X		X	X				
63	GC63	A	27/10/2022		X		X		X	X				
64	GC64	A	27/10/2022		X		X		X	X				
65	GC65	A	27/10/2022		X		X		X	X				
66	GC66	A	27/10/2022		X		X		X	X				
67	GC67	A	28/10/2022		X		X		X	X				
68	GC68	A	27/10/2022		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: 31/10/2022 Time: 1400

Relinquished by: (print and signature) Virginia Bragg Date 31/10/2022 Time 1400

Received by: (print and signature) B. Subaray Date 01/11/22 Time @ 7:10

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

Chain of Custody Form – Ref 13592-1

Ref:	**13592-1**	**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800							**SGS Method Code**					
Telephone:	(02) 6361 4954							**CL1T**					
Facsimile:	(02) 6360 3960												
Email:	felipe@envirowest.net.au												
Contact Person:	Felipe Canavez												
Invoice:	accounts@envirowest.net.au												
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015	Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)					
Quotation #:	Envir_70119_2019												
Courier/CN:	Grants Express												
Sample ID	**Container***	**Sampling Date/Time**											
GC69	A	27/10/2022		X		X		X	X				
GC70	A	27/10/2022		X		X		X	X				
GC71	A	27/10/2022		X		X		X	X				
GC72	A	27/10/2022		X		X		X	X				
GC73	A	27/10/2022		X		X		X	X				
GC74	A	27/10/2022		X		X		X	X				
GC75	A	27/10/2022		X		X		X	X				
GC76	A	27/10/2022		X		X		X	X				
GC77	A	27/10/2022		X		X		X	X				
GC78	A	27/10/2022		X		X		X	X				
GC79	A	27/10/2022		X		X		X	X				
GC80	A	27/10/2022		X		X		X	X				
GC81	A	27/10/2022		X		X		X	X				
GC82	A	27/10/2022		X		X		X	X				
GC83	A	27/10/2022		X		X		X	X				
GC84	A	27/10/2022		X		X		X	X				
GC85	A	27/10/2022		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: 31/10/2022 Time: 1400								
Relinquished by: (print and signature) Virginia Bragg		Date 31/10/2022		Time 1400	Received by: (print and signature)			Date 01/11/22	Time @ 7:10				

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

Chain of Custody Form – Ref 13592-1

Ref:	**13592-1**	**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800							**SGS Method Code**					
Telephone:	(02) 6361 4954							**CL1T**					
Facsimile:	(02) 6360 3960												
Email:	felipe@envirowest.net.au												
Contact Person:	Felipe Canavez												
Invoice:	accounts@envirowest.net.au												
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015	Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)					
Quotation #:	Envir_70119_2019												
Courier/CN:	Grants Express												
Sample ID	**Container***	**Sampling Date/Time**											
GC86	A	27/10/2022		X		X		X	X				
GC87	A	27/10/2022		X		X		X	X				
GC88	A	27/10/2022		X		X		X	X				
GC89	A	27/10/2022		X		X		X	X				
GC90	A	27/10/2022		X		X		X	X				
GC91	A	27/10/2022		X		X		X	X				
GC92	A	27/10/2022		X		X		X	X				
GC93	A	27/10/2022		X		X		X	X				
GC94	A	27/10/2022		X		X		X	X				
GC95	A	27/10/2022		X		X		X	X				
DA1	A	27/10/2022		X		X		X	X				
DA2	A	27/10/2022		X		X		X	X				
DA3	A	27/10/2022		X		X		X	X				
DA4	A	27/10/2022		X		X		X	X				
DA5	A	27/10/2022		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: 31/10/2022 Time: 1400

Relinquished by: (print and signature) Virginia Bragg Date 31/10/2022 Time 1400

Received by: (print and signature) Date Time 01/11/22 @ 7:10

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

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	61 2 63614954
Facsimile	(Not specified)
Email	felipe@envirowest.net.au
Project	**13592-2**
Order Number	**13592-2**
Samples	103

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE238484 R0**
Date Received	1/11/2022
Date Reported	2/12/2022

COMMENTS

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

% Clay subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146. Report Number: CE163165

SIGNATORIES

Dong LIANG
Metals/Inorganics Team Leader

Kamrul AHSAN
Senior Chemist

Shane MCDERMOTT
Inorganic/Metals Chemist

pH in soil (1:5) [AN101] Tested: 2/11/2022

PARAMETER	UOM	LOR	GC108 SOIL - 27/10/2022 SE238484.013
pH	pH Units	0.1	**5.4**

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) [AN122] Tested: 8/11/2022

PARAMETER	UOM	LOR	GC108 SOIL - 27/10/2022 SE238484.013
Exchangeable Calcium, Ca	mg/kg	2	**630**
Exchangeable Calcium, Ca	meq/100g	0.01	**3.1**
Exchangeable Calcium Percentage*	%	0.1	**74.6**
Exchangeable Potassium, K	mg/kg	2	**170**
Exchangeable Potassium, K	meq/100g	0.01	**0.44**
Exchangeable Potassium Percentage*	%	0.1	**10.4**
Exchangeable Magnesium, Mg	mg/kg	2	**71**
Exchangeable Magnesium, Mg	meq/100g	0.02	**0.58**
Exchangeable Magnesium Percentage*	%	0.1	**13.8**
Exchangeable Sodium, Na	mg/kg	2	**12**
Exchangeable Sodium, Na	meq/100g	0.01	**0.05**
Exchangeable Sodium Percentage*	%	0.1	**1.2**
Cation Exchange Capacity	meq/100g	0.02	**4.2**

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 3/11/2022

PARAMETER	UOM	LOR	GC96 SOIL - 27/10/2022 SE238484.001	GC97 SOIL - 27/10/2022 SE238484.002	GC98 SOIL - 27/10/2022 SE238484.003	GC99 SOIL - 27/10/2022 SE238484.004	GC100 SOIL - 27/10/2022 SE238484.005
Arsenic, As	mg/kg	1	3	3	3	4	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	3.4	8.8	2.9	7.9	2.5
Copper, Cu	mg/kg	0.5	9.5	8.6	4.5	7.5	7.8
Lead, Pb	mg/kg	1	5	5	6	5	4
Nickel, Ni	mg/kg	0.5	3.5	6.9	2.0	3.2	1.4
Zinc, Zn	mg/kg	2	36	26	17	26	25

PARAMETER	UOM	LOR	GC101 SOIL - 27/10/2022 SE238484.006	GC102 SOIL - 27/10/2022 SE238484.007	GC103 SOIL - 27/10/2022 SE238484.008	GC104 SOIL - 27/10/2022 SE238484.009	GC105 SOIL - 27/10/2022 SE238484.010
Arsenic, As	mg/kg	1	2	2	2	4	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	2.7	2.9	4.2	15	2.7
Copper, Cu	mg/kg	0.5	5.8	5.2	5.2	30	8.0
Lead, Pb	mg/kg	1	5	4	3	5	5
Nickel, Ni	mg/kg	0.5	1.4	1.2	1.5	7.1	1.5
Zinc, Zn	mg/kg	2	19	13	14	40	20

PARAMETER	UOM	LOR	GC106 SOIL - 27/10/2022 SE238484.011	GC107 SOIL - 27/10/2022 SE238484.012	GC108 SOIL - 27/10/2022 SE238484.013	GC113 SOIL - 27/10/2022 SE238484.014	GC114 SOIL - 27/10/2022 SE238484.015
Arsenic, As	mg/kg	1	2	2	3	2	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	4.1	4.6	8.7	2.3	3.0
Copper, Cu	mg/kg	0.5	6.5	6.2	5.1	7.9	8.4
Lead, Pb	mg/kg	1	5	4	7	4	4
Nickel, Ni	mg/kg	0.5	1.8	1.7	1.9	1.4	1.9
Zinc, Zn	mg/kg	2	23	21	16	23	21

PARAMETER	UOM	LOR	GC115 SOIL - 27/10/2022 SE238484.016	GC116 SOIL - 27/10/2022 SE238484.017	GC117 SOIL - 27/10/2022 SE238484.018	GC121 SOIL - 28/10/2022 SE238484.019	GC122 SOIL - 28/10/2022 SE238484.020
Arsenic, As	mg/kg	1	3	3	4	6	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	4.7	6.0	5.0	75	52
Copper, Cu	mg/kg	0.5	4.5	3.8	4.4	57	40
Lead, Pb	mg/kg	1	5	4	5	9	8
Nickel, Ni	mg/kg	0.5	1.6	1.3	1.8	18	18
Zinc, Zn	mg/kg	2	15	12	17	34	31

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 3/11/2022 (continued)

PARAMETER	UOM	LOR	GC123 SOIL - 28/10/2022 SE238484.021	GC124 SOIL - 28/10/2022 SE238484.022	GC125 SOIL - 28/10/2022 SE238484.023	GC126 SOIL - 28/10/2022 SE238484.024	GC127 SOIL - 28/10/2022 SE238484.025
Arsenic, As	mg/kg	1	6	6	3	4	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	44	20	30	29	27
Copper, Cu	mg/kg	0.5	44	38	36	35	33
Lead, Pb	mg/kg	1	8	6	5	6	4
Nickel, Ni	mg/kg	0.5	11	12	13	8.7	8.6
Zinc, Zn	mg/kg	2	31	48	46	34	39

PARAMETER	UOM	LOR	GC128 SOIL - 28/10/2022 SE238484.026	GC129 SOIL - 28/10/2022 SE238484.027	GC130 SOIL - 28/10/2022 SE238484.028	GC131 SOIL - 28/10/2022 SE238484.029	GC132 SOIL - 28/10/2022 SE238484.030
Arsenic, As	mg/kg	1	4	4	5	6	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	43	40	53	67	71
Copper, Cu	mg/kg	0.5	40	56	58	52	63
Lead, Pb	mg/kg	1	4	3	8	8	7
Nickel, Ni	mg/kg	0.5	14	15	23	21	25
Zinc, Zn	mg/kg	2	42	48	45	46	48

PARAMETER	UOM	LOR	GC133 SOIL - 28/10/2022 SE238484.031	GC134 SOIL - 28/10/2022 SE238484.032	GC135 SOIL - 28/10/2022 SE238484.033	GC136 SOIL - 28/10/2022 SE238484.034	GC137 SOIL - 28/10/2022 SE238484.035
Arsenic, As	mg/kg	1	4	5	5	5	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	67	61	27	26	21
Copper, Cu	mg/kg	0.5	59	52	28	60	28
Lead, Pb	mg/kg	1	6	6	6	5	5
Nickel, Ni	mg/kg	0.5	25	20	7.7	8.9	8.3
Zinc, Zn	mg/kg	2	46	49	39	38	46

PARAMETER	UOM	LOR	GC138 SOIL - 28/10/2022 SE238484.036	GC139 SOIL - 28/10/2022 SE238484.037	GC140 SOIL - 28/10/2022 SE238484.038	GC141 SOIL - 28/10/2022 SE238484.039	GC142 SOIL - 28/10/2022 SE238484.040
Arsenic, As	mg/kg	1	4	2	4	5	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	25	32	37	45	43
Copper, Cu	mg/kg	0.5	35	58	36	31	29
Lead, Pb	mg/kg	1	4	3	5	5	4
Nickel, Ni	mg/kg	0.5	8.3	12	9.4	11	11
Zinc, Zn	mg/kg	2	44	44	41	40	44

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 3/11/2022 (continued)

PARAMETER	UOM	LOR	GC143 SOIL - 28/10/2022 SE238484.041	GC144 SOIL - 28/10/2022 SE238484.042	GC145 SOIL - 28/10/2022 SE238484.043	GC146 SOIL - 28/10/2022 SE238484.044	GC147 SOIL - 28/10/2022 SE238484.045
Arsenic, As	mg/kg	1	4	3	5	4	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	22	19	11	3.4	4.9
Copper, Cu	mg/kg	0.5	35	12	25	7.9	6.4
Lead, Pb	mg/kg	1	5	5	5	6	5
Nickel, Ni	mg/kg	0.5	9.0	4.2	5.9	1.7	2.2
Zinc, Zn	mg/kg	2	58	28	39	19	23

PARAMETER	UOM	LOR	GC148 SOIL - 28/10/2022 SE238484.046	GC149 SOIL - 28/10/2022 SE238484.047	GC150 SOIL - 28/10/2022 SE238484.048	GC151 SOIL - 28/10/2022 SE238484.049	GC152 SOIL - 28/10/2022 SE238484.050
Arsenic, As	mg/kg	1	4	4	5	9	9
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	3.7	2.9	7.8	19	25
Copper, Cu	mg/kg	0.5	5.6	7.6	20	49	56
Lead, Pb	mg/kg	1	4	4	4	7	7
Nickel, Ni	mg/kg	0.5	1.7	1.6	4.0	9.9	11
Zinc, Zn	mg/kg	2	16	18	32	54	61

PARAMETER	UOM	LOR	GC153 SOIL - 28/10/2022 SE238484.051	GC154 SOIL - 28/10/2022 SE238484.052	GC155 SOIL - 28/10/2022 SE238484.053	GC156 SOIL - 28/10/2022 SE238484.054	GC157 SOIL - 28/10/2022 SE238484.055
Arsenic, As	mg/kg	1	6	4	6	4	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	19	31	27	36	26
Copper, Cu	mg/kg	0.5	45	38	45	40	36
Lead, Pb	mg/kg	1	6	5	5	5	10
Nickel, Ni	mg/kg	0.5	9.2	10	9.9	9.9	9.8
Zinc, Zn	mg/kg	2	50	50	51	40	45

PARAMETER	UOM	LOR	GC158 SOIL - 28/10/2022 SE238484.056	GC159 SOIL - 28/10/2022 SE238484.057	GC160 SOIL - 28/10/2022 SE238484.058	GC161 SOIL - 28/10/2022 SE238484.059	GC162 SOIL - 28/10/2022 SE238484.060
Arsenic, As	mg/kg	1	6	4	10	6	7
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	22	27	29	19	52
Copper, Cu	mg/kg	0.5	40	34	35	37	50
Lead, Pb	mg/kg	1	7	6	9	8	6
Nickel, Ni	mg/kg	0.5	6.1	8.0	7.6	8.5	18
Zinc, Zn	mg/kg	2	36	38	48	53	50

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 3/11/2022 (continued)

PARAMETER	UOM	LOR	GC163 SOIL - 28/10/2022 SE238484.061	GC164 SOIL - 28/10/2022 SE238484.062	GC165 SOIL - 28/10/2022 SE238484.063	GC166 SOIL - 28/10/2022 SE238484.064	GC167 SOIL - 28/10/2022 SE238484.065
Arsenic, As	mg/kg	1	6	6	7	9	10
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	60	63	40	21	22
Copper, Cu	mg/kg	0.5	47	54	39	52	65
Lead, Pb	mg/kg	1	8	6	10	6	6
Nickel, Ni	mg/kg	0.5	19	27	14	8.9	10
Zinc, Zn	mg/kg	2	41	49	40	55	79

PARAMETER	UOM	LOR	GC168 SOIL - 28/10/2022 SE238484.066	GC169 SOIL - 28/10/2022 SE238484.067	GC170 SOIL - 28/10/2022 SE238484.068	GC171 SOIL - 28/10/2022 SE238484.069	GC172 SOIL - 28/10/2022 SE238484.070
Arsenic, As	mg/kg	1	8	7	8	9	8
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	20	19	17	22	17
Copper, Cu	mg/kg	0.5	48	48	52	55	46
Lead, Pb	mg/kg	1	6	7	7	8	7
Nickel, Ni	mg/kg	0.5	9.2	9.7	7.5	9.0	7.0
Zinc, Zn	mg/kg	2	66	63	47	58	69

PARAMETER	UOM	LOR	GC173 SOIL - 28/10/2022 SE238484.071	GC174 SOIL - 28/10/2022 SE238484.072	GC175 SOIL - 28/10/2022 SE238484.073	GC176 SOIL - 28/10/2022 SE238484.074	GC177 SOIL - 28/10/2022 SE238484.075
Arsenic, As	mg/kg	1	8	7	5	4	12
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	20	15	4.0	3.3	27
Copper, Cu	mg/kg	0.5	46	39	7.9	5.3	73
Lead, Pb	mg/kg	1	6	6	5	5	7
Nickel, Ni	mg/kg	0.5	8.0	7.0	1.8	1.5	13
Zinc, Zn	mg/kg	2	41	42	20	14	67

PARAMETER	UOM	LOR	GC178 SOIL - 28/10/2022 SE238484.076	GC179 SOIL - 28/10/2022 SE238484.077	GC180 SOIL - 28/10/2022 SE238484.078	GC181 SOIL - 28/10/2022 SE238484.079	GC182 SOIL - 28/10/2022 SE238484.080
Arsenic, As	mg/kg	1	8	9	11	11	13
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	21	23	24	24	22
Copper, Cu	mg/kg	0.5	50	55	78	65	71
Lead, Pb	mg/kg	1	6	8	7	7	7
Nickel, Ni	mg/kg	0.5	9.1	9.1	11	11	10
Zinc, Zn	mg/kg	2	49	53	61	60	51

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 3/11/2022 (continued)

PARAMETER	UOM	LOR	GC183 SOIL - 28/10/2022 SE238484.081	GC184 SOIL - 28/10/2022 SE238484.082	GC185 SOIL - 28/10/2022 SE238484.083	GC186 SOIL - 28/10/2022 SE238484.084	GC187 SOIL - 28/10/2022 SE238484.085
Arsenic, As	mg/kg	1	16	15	20	6	12
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	25	21	31	6.6	23
Copper, Cu	mg/kg	0.5	74	81	83	13	62
Lead, Pb	mg/kg	1	8	7	8	6	7
Nickel, Ni	mg/kg	0.5	12	11	13	3.0	9.5
Zinc, Zn	mg/kg	2	62	55	58	26	52

PARAMETER	UOM	LOR	GC188 SOIL - 28/10/2022 SE238484.086	GC189 SOIL - 28/10/2022 SE238484.087	GC190 SOIL - 28/10/2022 SE238484.088	GC191 SOIL - 28/10/2022 SE238484.089	GC192 SOIL - 28/10/2022 SE238484.090
Arsenic, As	mg/kg	1	14	20	17	14	11
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	25	32	21	25	27
Copper, Cu	mg/kg	0.5	78	99	80	77	63
Lead, Pb	mg/kg	1	6	7	7	8	5
Nickel, Ni	mg/kg	0.5	12	15	10	10	11
Zinc, Zn	mg/kg	2	56	65	52	55	50

PARAMETER	UOM	LOR	GC193 SOIL - 28/10/2022 SE238484.091	GC194 SOIL - 28/10/2022 SE238484.092	GC195 SOIL - 28/10/2022 SE238484.093	GC196 SOIL - 28/10/2022 SE238484.094	GC197 SOIL - 28/10/2022 SE238484.095
Arsenic, As	mg/kg	1	12	12	14	14	10
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	26	17	30	25	25
Copper, Cu	mg/kg	0.5	72	65	71	75	73
Lead, Pb	mg/kg	1	7	5	6	14	9
Nickel, Ni	mg/kg	0.5	11	9.2	12	12	12
Zinc, Zn	mg/kg	2	58	59	59	70	70

PARAMETER	UOM	LOR	GC198 SOIL - 28/10/2022 SE238484.096	GC199 SOIL - 28/10/2022 SE238484.097	GC200 SOIL - 28/10/2022 SE238484.098	DA6 SOIL - 28/10/2022 SE238484.099	DA7 SOIL - 28/10/2022 SE238484.100
Arsenic, As	mg/kg	1	7	12	15	2	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	20	23	25	2.6	66
Copper, Cu	mg/kg	0.5	43	68	77	5.7	49
Lead, Pb	mg/kg	1	6	5	7	4	9
Nickel, Ni	mg/kg	0.5	8.9	10	11	1.3	17
Zinc, Zn	mg/kg	2	47	58	71	17	33

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 3/11/2022 (continued)

PARAMETER	UOM	LOR	DA8 SOIL - 28/10/2022 SE238484.101	DA9 SOIL - 28/10/2022 SE238484.102	DA10 SOIL - 28/10/2022 SE238484.103
Arsenic, As	mg/kg	1	**5**	**6**	**10**
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	**44**	**21**	**23**
Copper, Cu	mg/kg	0.5	**32**	**40**	**70**
Lead, Pb	mg/kg	1	**5**	**8**	**9**
Nickel, Ni	mg/kg	0.5	**11**	**8.7**	**12**
Zinc, Zn	mg/kg	2	**40**	**55**	**69**

Moisture Content [AN002] Tested: 7/11/2022

PARAMETER	UOM	LOR	GC96 SOIL - 27/10/2022 SE238484.001	GC97 SOIL - 27/10/2022 SE238484.002	GC98 SOIL - 27/10/2022 SE238484.003	GC99 SOIL - 27/10/2022 SE238484.004	GC100 SOIL - 27/10/2022 SE238484.005
% Moisture	%w/w	1	34.7	27.8	25.7	26.4	39.3

PARAMETER	UOM	LOR	GC101 SOIL - 27/10/2022 SE238484.006	GC102 SOIL - 27/10/2022 SE238484.007	GC103 SOIL - 27/10/2022 SE238484.008	GC104 SOIL - 27/10/2022 SE238484.009	GC105 SOIL - 27/10/2022 SE238484.010
% Moisture	%w/w	1	28.3	24.5	26.0	28.4	22.1

PARAMETER	UOM	LOR	GC106 SOIL - 27/10/2022 SE238484.011	GC107 SOIL - 27/10/2022 SE238484.012	GC108 SOIL - 27/10/2022 SE238484.013	GC113 SOIL - 27/10/2022 SE238484.014	GC114 SOIL - 27/10/2022 SE238484.015
% Moisture	%w/w	1	18.1	26.0	20.6	27.6	18.3

PARAMETER	UOM	LOR	GC115 SOIL - 27/10/2022 SE238484.016	GC116 SOIL - 27/10/2022 SE238484.017	GC117 SOIL - 27/10/2022 SE238484.018	GC121 SOIL - 28/10/2022 SE238484.019	GC122 SOIL - 28/10/2022 SE238484.020
% Moisture	%w/w	1	20.6	20.5	21.1	30.0	28.1

PARAMETER	UOM	LOR	GC123 SOIL - 28/10/2022 SE238484.021	GC124 SOIL - 28/10/2022 SE238484.022	GC125 SOIL - 28/10/2022 SE238484.023	GC126 SOIL - 28/10/2022 SE238484.024	GC127 SOIL - 28/10/2022 SE238484.025
% Moisture	%w/w	1	28.9	33.2	25.9	25.4	23.6

PARAMETER	UOM	LOR	GC128 SOIL - 28/10/2022 SE238484.026	GC129 SOIL - 28/10/2022 SE238484.027	GC130 SOIL - 28/10/2022 SE238484.028	GC131 SOIL - 28/10/2022 SE238484.029	GC132 SOIL - 28/10/2022 SE238484.030
% Moisture	%w/w	1	31.9	28.9	24.9	27.4	20.7

PARAMETER	UOM	LOR	GC133 SOIL - 28/10/2022 SE238484.031	GC134 SOIL - 28/10/2022 SE238484.032	GC135 SOIL - 28/10/2022 SE238484.033	GC136 SOIL - 28/10/2022 SE238484.034	GC137 SOIL - 28/10/2022 SE238484.035
% Moisture	%w/w	1	28.7	33.3	27.6	31.7	29.6

Moisture Content [AN002] Tested: 7/11/2022 (continued)

PARAMETER	UOM	LOR	GC138 SOIL - 28/10/2022 SE238484.036	GC139 SOIL - 28/10/2022 SE238484.037	GC140 SOIL - 28/10/2022 SE238484.038	GC141 SOIL - 28/10/2022 SE238484.039	GC142 SOIL - 28/10/2022 SE238484.040
% Moisture	%w/w	1	32.6	23.3	27.3	18.9	19.0

PARAMETER	UOM	LOR	GC143 SOIL - 28/10/2022 SE238484.041	GC144 SOIL - 28/10/2022 SE238484.042	GC145 SOIL - 28/10/2022 SE238484.043	GC146 SOIL - 28/10/2022 SE238484.044	GC147 SOIL - 28/10/2022 SE238484.045
% Moisture	%w/w	1	13.5	11.1	13.8	12.5	13.4

PARAMETER	UOM	LOR	GC148 SOIL - 28/10/2022 SE238484.046	GC149 SOIL - 28/10/2022 SE238484.047	GC150 SOIL - 28/10/2022 SE238484.048	GC151 SOIL - 28/10/2022 SE238484.049	GC152 SOIL - 28/10/2022 SE238484.050
% Moisture	%w/w	1	12.1	18.7	14.1	16.0	22.3

PARAMETER	UOM	LOR	GC153 SOIL - 28/10/2022 SE238484.051	GC154 SOIL - 28/10/2022 SE238484.052	GC155 SOIL - 28/10/2022 SE238484.053	GC156 SOIL - 28/10/2022 SE238484.054	GC157 SOIL - 28/10/2022 SE238484.055
% Moisture	%w/w	1	12.3	17.4	17.1	13.3	16.5

PARAMETER	UOM	LOR	GC158 SOIL - 28/10/2022 SE238484.056	GC159 SOIL - 28/10/2022 SE238484.057	GC160 SOIL - 28/10/2022 SE238484.058	GC161 SOIL - 28/10/2022 SE238484.059	GC162 SOIL - 28/10/2022 SE238484.060
% Moisture	%w/w	1	14.4	16.2	24.6	25.7	26.8

PARAMETER	UOM	LOR	GC163 SOIL - 28/10/2022 SE238484.061	GC164 SOIL - 28/10/2022 SE238484.062	GC165 SOIL - 28/10/2022 SE238484.063	GC166 SOIL - 28/10/2022 SE238484.064	GC167 SOIL - 28/10/2022 SE238484.065
% Moisture	%w/w	1	28.3	33.6	27.4	24.7	23.2

PARAMETER	UOM	LOR	GC168 SOIL - 28/10/2022 SE238484.066	GC169 SOIL - 28/10/2022 SE238484.067	GC170 SOIL - 28/10/2022 SE238484.068	GC171 SOIL - 28/10/2022 SE238484.069	GC172 SOIL - 28/10/2022 SE238484.070
% Moisture	%w/w	1	28.2	31.1	24.4	26.7	24.5

Moisture Content [AN002] Tested: 7/11/2022 (continued)

PARAMETER	UOM	LOR	GC173 SOIL - 28/10/2022 SE238484.071	GC174 SOIL - 28/10/2022 SE238484.072	GC175 SOIL - 28/10/2022 SE238484.073	GC176 SOIL - 28/10/2022 SE238484.074	GC177 SOIL - 28/10/2022 SE238484.075
% Moisture	%w/w	1	19.0	25.9	26.4	22.9	30.6

PARAMETER	UOM	LOR	GC178 SOIL - 28/10/2022 SE238484.076	GC179 SOIL - 28/10/2022 SE238484.077	GC180 SOIL - 28/10/2022 SE238484.078	GC181 SOIL - 28/10/2022 SE238484.079	GC182 SOIL - 28/10/2022 SE238484.080
% Moisture	%w/w	1	23.0	26.2	30.7	30.9	26.2

PARAMETER	UOM	LOR	GC183 SOIL - 28/10/2022 SE238484.081	GC184 SOIL - 28/10/2022 SE238484.082	GC185 SOIL - 28/10/2022 SE238484.083	GC186 SOIL - 28/10/2022 SE238484.084	GC187 SOIL - 28/10/2022 SE238484.085
% Moisture	%w/w	1	44.2	30.9	28.9	26.8	25.2

PARAMETER	UOM	LOR	GC188 SOIL - 28/10/2022 SE238484.086	GC189 SOIL - 28/10/2022 SE238484.087	GC190 SOIL - 28/10/2022 SE238484.088	GC191 SOIL - 28/10/2022 SE238484.089	GC192 SOIL - 28/10/2022 SE238484.090
% Moisture	%w/w	1	26.4	30.3	30.4	31.8	27.5

PARAMETER	UOM	LOR	GC193 SOIL - 28/10/2022 SE238484.091	GC194 SOIL - 28/10/2022 SE238484.092	GC195 SOIL - 28/10/2022 SE238484.093	GC196 SOIL - 28/10/2022 SE238484.094	GC197 SOIL - 28/10/2022 SE238484.095
% Moisture	%w/w	1	27.7	34.8	26.5	30.5	29.8

PARAMETER	UOM	LOR	GC198 SOIL - 28/10/2022 SE238484.096	GC199 SOIL - 28/10/2022 SE238484.097	GC200 SOIL - 28/10/2022 SE238484.098	DA6 SOIL - 28/10/2022 SE238484.099	DA7 SOIL - 28/10/2022 SE238484.100
% Moisture	%w/w	1	25.3	29.1	34.2	32.3	30.6

PARAMETER	UOM	LOR	DA8 SOIL - 28/10/2022 SE238484.101	DA9 SOIL - 28/10/2022 SE238484.102	DA10 SOIL - 28/10/2022 SE238484.103
% Moisture	%w/w	1	21.9	28.6	32.4

Particle sizing of soils by sieving [AN005] Tested: 2/12/2022

PARAMETER	UOM	LOR	GC108 SOIL - 27/10/2022 SE238484.013
Passing 75µm*	%w/w	1	**42**
Retained 75µm*	%w/w	1	**58**

Particle sizing of soils <75µm by hydrometer [AN005] Tested: 2/12/2022

PARAMETER	UOM	LOR	GC108 SOIL - 27/10/2022 SE238484.013
Clay (<0.002mm)*	%w/w	0.1	**4.0**

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.
AN005	The particle size distribution of a soil is determined by wet sieving, using a maximum of 900 mL of deionised water to sieve all fractions down to 75 µm. Referenced to AS1289.3.6.1 and AS1141.11.
AN005	Following wet sieving of the sample,(particles smaller than 75 µm) a dispersing solution is added and a hydrometer is used to measure sedimentation. Soil density is determined and the percentage of each size fraction calculated. Referenced to AS1289.3.6.3.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode and is calibrated against 3 buffers purchased commercially. For soils, sediments and sludges, an extract with water (or 0.01M CaCl2) is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN122	Exchangeable Cations, CEC and ESP: Soil sample is extracted in 1M Ammonium Acetate at pH=7 (or 1M Ammonium Chloride at pH=7) with cations (Na, K, Ca & Mg) then determined by ICP OES/ICP MS and reported as Exchangeable Cations. For saline soils, these results can be corrected for water soluble cations and reported as Exchangeable cations in meq/100g or soil can be pre-treated (aqueous ethanol/aqueous glycerol) prior to extraction. Cation Exchange Capacity (CEC) is the sum of the exchangeable cations in meq/100g.
AN122	The Exchangeable Sodium Percentage (ESP) is calculated as the exchangeable sodium divided by the CEC (all in meq/100g) times 100. ESP can be used to categorise the sodicity of the soil as below: ESP < 6% non-sodic ESP 6-15% sodic ESP >15% strongly sodic Method is referenced to Rayment and Lyons, 2011, sections 15D3 and 15N1.-

FOOTNOTES

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

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

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

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

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

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

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

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

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

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STATEMENT OF QA/QC PERFORMANCE

SE238484 R0

CLIENT DETAILS

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Facsimile	(Not specified)
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Project	**13592-2**
Order Number	**13592-2**
Samples	103

LABORATORY DETAILS

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SGS Reference	**SE238484 R0**
Date Received	01 Nov 2022
Date Reported	02 Dec 2022

COMMENTS

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

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

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	103 Soil
Date documentation received	1/11/2022	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	14.5°C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

HOLDING TIME SUMMARY

SE238484 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

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC108	SE238484.013	LB263041	27 Oct 2022	01 Nov 2022	24 Nov 2022	08 Nov 2022	24 Nov 2022	08 Nov 2022

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC96	SE238484.001	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC97	SE238484.002	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC98	SE238484.003	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC99	SE238484.004	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC100	SE238484.005	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC101	SE238484.006	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC102	SE238484.007	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC103	SE238484.008	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC104	SE238484.009	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC105	SE238484.010	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC106	SE238484.011	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC107	SE238484.012	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC108	SE238484.013	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC113	SE238484.014	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC114	SE238484.015	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC115	SE238484.016	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC116	SE238484.017	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC117	SE238484.018	LB262923	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC121	SE238484.019	LB262923	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC122	SE238484.020	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC123	SE238484.021	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC124	SE238484.022	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC125	SE238484.023	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC126	SE238484.024	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC127	SE238484.025	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC128	SE238484.026	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC129	SE238484.027	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC130	SE238484.028	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC131	SE238484.029	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC132	SE238484.030	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC133	SE238484.031	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC134	SE238484.032	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC135	SE238484.033	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC136	SE238484.034	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC137	SE238484.035	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC138	SE238484.036	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC139	SE238484.037	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC140	SE238484.038	LB262924	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC141	SE238484.039	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC142	SE238484.040	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC143	SE238484.041	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC144	SE238484.042	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC145	SE238484.043	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC146	SE238484.044	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC147	SE238484.045	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC148	SE238484.046	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC149	SE238484.047	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC150	SE238484.048	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC151	SE238484.049	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC152	SE238484.050	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC153	SE238484.051	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC154	SE238484.052	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC155	SE238484.053	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC156	SE238484.054	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC157	SE238484.055	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022

HOLDING TIME SUMMARY

SE238484 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 (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC158	SE238484.056	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC159	SE238484.057	LB262925	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC160	SE238484.058	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC161	SE238484.059	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC162	SE238484.060	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC163	SE238484.061	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC164	SE238484.062	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC165	SE238484.063	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC166	SE238484.064	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC167	SE238484.065	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC168	SE238484.066	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC169	SE238484.067	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC170	SE238484.068	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC171	SE238484.069	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC172	SE238484.070	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC173	SE238484.071	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC174	SE238484.072	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC175	SE238484.073	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC176	SE238484.074	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC177	SE238484.075	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC178	SE238484.076	LB262926	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	08 Nov 2022
GC179	SE238484.077	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC180	SE238484.078	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC181	SE238484.079	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC182	SE238484.080	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC183	SE238484.081	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC184	SE238484.082	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC185	SE238484.083	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC186	SE238484.084	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC187	SE238484.085	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC188	SE238484.086	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC189	SE238484.087	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC190	SE238484.088	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC191	SE238484.089	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC192	SE238484.090	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC193	SE238484.091	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC194	SE238484.092	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC195	SE238484.093	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC196	SE238484.094	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC197	SE238484.095	LB262927	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	09 Nov 2022
GC198	SE238484.096	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC199	SE238484.097	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC200	SE238484.098	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
DA6	SE238484.099	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
DA7	SE238484.100	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
DA8	SE238484.101	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
DA9	SE238484.102	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
DA10	SE238484.103	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC108	SE238484.013	LB262478	27 Oct 2022	01 Nov 2022	03 Nov 2022	02 Nov 2022	03 Nov 2022	02 Nov 2022

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC96	SE238484.001	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC97	SE238484.002	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC98	SE238484.003	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC99	SE238484.004	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC100	SE238484.005	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC101	SE238484.006	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC102	SE238484.007	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC103	SE238484.008	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC104	SE238484.009	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC105	SE238484.010	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC106	SE238484.011	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC107	SE238484.012	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC108	SE238484.013	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC113	SE238484.014	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC114	SE238484.015	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC115	SE238484.016	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC116	SE238484.017	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC117	SE238484.018	LB262603	27 Oct 2022	01 Nov 2022	25 Apr 2023	03 Nov 2022	25 Apr 2023	08 Nov 2022
GC121	SE238484.019	LB262603	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC122	SE238484.020	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC123	SE238484.021	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC124	SE238484.022	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC125	SE238484.023	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC126	SE238484.024	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC127	SE238484.025	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC128	SE238484.026	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC129	SE238484.027	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC130	SE238484.028	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC131	SE238484.029	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC132	SE238484.030	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC133	SE238484.031	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC134	SE238484.032	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC135	SE238484.033	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC136	SE238484.034	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC137	SE238484.035	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC138	SE238484.036	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC139	SE238484.037	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC140	SE238484.038	LB262604	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC141	SE238484.039	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC142	SE238484.040	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC143	SE238484.041	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC144	SE238484.042	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC145	SE238484.043	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC146	SE238484.044	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC147	SE238484.045	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC148	SE238484.046	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC149	SE238484.047	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC150	SE238484.048	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC151	SE238484.049	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC152	SE238484.050	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC153	SE238484.051	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC154	SE238484.052	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC155	SE238484.053	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC156	SE238484.054	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC157	SE238484.055	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC158	SE238484.056	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC159	SE238484.057	LB262605	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC160	SE238484.058	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC161	SE238484.059	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC162	SE238484.060	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC163	SE238484.061	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC164	SE238484.062	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC165	SE238484.063	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC166	SE238484.064	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC167	SE238484.065	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC168	SE238484.066	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC169	SE238484.067	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC170	SE238484.068	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC171	SE238484.069	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC172	SE238484.070	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC173	SE238484.071	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC174	SE238484.072	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC175	SE238484.073	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC176	SE238484.074	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC177	SE238484.075	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC178	SE238484.076	LB262606	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	08 Nov 2022
GC179	SE238484.077	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC180	SE238484.078	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC181	SE238484.079	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC182	SE238484.080	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC183	SE238484.081	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC184	SE238484.082	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC185	SE238484.083	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC186	SE238484.084	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC187	SE238484.085	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC188	SE238484.086	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC189	SE238484.087	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC190	SE238484.088	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC191	SE238484.089	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC192	SE238484.090	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC193	SE238484.091	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC194	SE238484.092	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC195	SE238484.093	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC196	SE238484.094	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC197	SE238484.095	LB262607	28 Oct 2022	01 Nov 2022	26 Apr 2023	03 Nov 2022	26 Apr 2023	09 Nov 2022
GC198	SE238484.096	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC199	SE238484.097	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC200	SE238484.098	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
DA6	SE238484.099	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
DA7	SE238484.100	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
DA8	SE238484.101	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
DA9	SE238484.102	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
DA10	SE238484.103	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022

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

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

No surrogates were required for this job.

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

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

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) — Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result
LB263041.001	Exchangeable Sodium, Na	mg/kg	2	-1.4536
	Exchangeable Potassium, K	mg/kg	2	-0.2513
	Exchangeable Calcium, Ca	mg/kg	2	-1.6744
	Exchangeable Magnesium, Mg	mg/kg	2	-0.0808

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

Sample Number	Parameter	Units	LOR	Result
LB262603.001	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
LB262604.001	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
LB262605.001	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
LB262606.001	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
LB262607.001	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
LB262946.001	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

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

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

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

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

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

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238484.010	LB262923.011	% Moisture	%w/w	1	22.1	22.7	34	3
SE238484.019	LB262923.021	% Moisture	%w/w	1	30.0	26.8	34	11
SE238484.029	LB262924.011	% Moisture	%w/w	1	27.4	32.7	33	18
SE238484.038	LB262924.021	% Moisture	%w/w	1	27.3	29.4	34	7
SE238484.048	LB262925.011	% Moisture	%w/w	1	14.1	14.5	37	3
SE238484.057	LB262925.021	% Moisture	%w/w	1	16.2	16.6	36	3
SE238484.067	LB262926.011	% Moisture	%w/w	1	31.1	27.4	33	13
SE238484.076	LB262926.021	% Moisture	%w/w	1	23.0	22.8	34	1
SE238484.086	LB262927.011	% Moisture	%w/w	1	26.4	26.7	34	1
SE238484.095	LB262927.021	% Moisture	%w/w	1	29.8	30.1	33	1
SE238484.102	LB262961.011	% Moisture	%w/w	1	28.6	26.7	34	7
SE238485.008	LB262961.021	% Moisture	%w/w	1	27.2	24.4	34	11

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238418.005	LB262478.013	pH	pH Units	0.1	7.8	7.7	31	2

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 %
SE238484.010	LB262603.014	Arsenic, As	mg/kg	1	2	2	73	15
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	2.7	2.7	49	1
		Copper, Cu	mg/kg	0.5	8.0	7.6	36	5
		Nickel, Ni	mg/kg	0.5	1.5	1.5	63	3
		Lead, Pb	mg/kg	1	5	5	52	1
		Zinc, Zn	mg/kg	2	20	19	40	1
SE238484.019	LB262603.024	Arsenic, As	mg/kg	1	6	5	49	16
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	75	69	31	9
		Copper, Cu	mg/kg	0.5	57	56	31	0
		Nickel, Ni	mg/kg	0.5	18	23	32	22
		Lead, Pb	mg/kg	1	9	9	41	1
		Zinc, Zn	mg/kg	2	34	36	36	7
SE238484.029	LB262604.014	Arsenic, As	mg/kg	1	6	5	48	17
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	67	54	31	22
		Copper, Cu	mg/kg	0.5	52	40	31	26
		Nickel, Ni	mg/kg	0.5	21	17	33	24
		Lead, Pb	mg/kg	1	8	6	44	26
		Zinc, Zn	mg/kg	2	46	38	35	18
SE238484.038	LB262604.024	Arsenic, As	mg/kg	1	4	4	52	2
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	37	37	31	1
		Copper, Cu	mg/kg	0.5	36	36	31	0
		Nickel, Ni	mg/kg	0.5	9.4	9.7	35	2
		Lead, Pb	mg/kg	1	5	5	51	1
		Zinc, Zn	mg/kg	2	41	41	35	0
SE238484.048	LB262605.014	Arsenic, As	mg/kg	1	5	5	50	1
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	7.8	8.4	36	6
		Copper, Cu	mg/kg	0.5	20	21	32	6
		Nickel, Ni	mg/kg	0.5	4.0	4.2	42	4
		Lead, Pb	mg/kg	1	4	5	52	3
		Zinc, Zn	mg/kg	2	32	33	36	3
SE238484.057	LB262605.024	Arsenic, As	mg/kg	1	4	4	54	13
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	27	24	32	12
		Copper, Cu	mg/kg	0.5	34	31	32	8
		Nickel, Ni	mg/kg	0.5	8.0	7.1	37	11

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

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

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

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

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

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238484.057	LB262605.024	Lead, Pb	mg/kg	1	6	5	48	12
		Zinc, Zn	mg/kg	2	38	39	35	1
SE238484.067	LB262606.014	Arsenic, As	mg/kg	1	7	7	45	1
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	19	19	33	1
		Copper, Cu	mg/kg	0.5	48	47	31	1
		Nickel, Ni	mg/kg	0.5	9.7	9.6	35	2
		Lead, Pb	mg/kg	1	7	7	44	5
		Zinc, Zn	mg/kg	2	63	64	33	2
SE238484.076	LB262606.024	Arsenic, As	mg/kg	1	8	9	41	10
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	21	20	32	3
		Copper, Cu	mg/kg	0.5	50	48	31	4
		Nickel, Ni	mg/kg	0.5	9.1	8.8	36	4
		Lead, Pb	mg/kg	1	6	6	46	1
		Zinc, Zn	mg/kg	2	49	50	34	2
SE238484.086	LB262607.014	Arsenic, As	mg/kg	1	14	14	37	1
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	195	0
		Chromium, Cr	mg/kg	0.5	25	25	32	0
		Copper, Cu	mg/kg	0.5	78	80	31	2
		Nickel, Ni	mg/kg	0.5	12	11	34	3
		Lead, Pb	mg/kg	1	6	7	45	6
		Zinc, Zn	mg/kg	2	56	59	33	6
SE238484.095	LB262607.024	Arsenic, As	mg/kg	1	10	10	40	2
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	176	0
		Chromium, Cr	mg/kg	0.5	25	26	32	3
		Copper, Cu	mg/kg	0.5	73	77	31	5
		Nickel, Ni	mg/kg	0.5	12	13	34	5
		Lead, Pb	mg/kg	1	9	10	41	8
		Zinc, Zn	mg/kg	2	70	75	33	6
SE238484.102	LB262946.014	Arsenic, As	mg/kg	1	6	6	46	1
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	21	19	33	9
		Copper, Cu	mg/kg	0.5	40	38	31	5
		Nickel, Ni	mg/kg	0.5	8.7	8.2	36	5
		Lead, Pb	mg/kg	1	8	8	42	2
		Zinc, Zn	mg/kg	2	55	54	34	3
SE238485.008	LB262946.024	Arsenic, As	mg/kg	1	11	12	39	9
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	21	23	32	8
		Copper, Cu	mg/kg	0.5	55	61	31	10
		Nickel, Ni	mg/kg	0.5	7.9	8.7	36	9
		Lead, Pb	mg/kg	1	6	6	47	8
		Zinc, Zn	mg/kg	2	50	49	34	2

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

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

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB263041.002	Exchangeable Sodium, Na	meq/100g	0.01	0.20	0.194	80 - 120	101
	Exchangeable Potassium, K	meq/100g	0.01	0.61	0.63	80 - 120	96
	Exchangeable Calcium, Ca	meq/100g	0.01	5.5	6.3	80 - 120	87
	Exchangeable Magnesium, Mg	meq/100g	0.02	1.0	1.11	80 - 120	94

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB262478.003	pH	pH Units	0.1	7.5	7.415	98 - 102	101

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

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB262603.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	104
	Cadmium, Cd	mg/kg	0.3	4.4	4.81	70 - 130	92
	Chromium, Cr	mg/kg	0.5	39	38.31	80 - 120	101
	Copper, Cu	mg/kg	0.5	330	290	80 - 120	115
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	102
	Lead, Pb	mg/kg	1	93	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	280	273	80 - 120	101
LB262604.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	103
	Cadmium, Cd	mg/kg	0.3	4.4	4.81	70 - 130	91
	Chromium, Cr	mg/kg	0.5	37	38.31	80 - 120	96
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	106
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	100
	Lead, Pb	mg/kg	1	92	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	270	273	80 - 120	99
LB262605.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	105
	Cadmium, Cd	mg/kg	0.3	4.5	4.81	70 - 130	94
	Chromium, Cr	mg/kg	0.5	39	38.31	80 - 120	102
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	109
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	102
	Lead, Pb	mg/kg	1	94	89.9	80 - 120	104
	Zinc, Zn	mg/kg	2	280	273	80 - 120	102
LB262606.002	Arsenic, As	mg/kg	1	340	318.22	80 - 120	106
	Cadmium, Cd	mg/kg	0.3	4.5	4.81	70 - 130	93
	Chromium, Cr	mg/kg	0.5	38	38.31	80 - 120	100
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	109
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	103
	Lead, Pb	mg/kg	1	94	89.9	80 - 120	105
	Zinc, Zn	mg/kg	2	280	273	80 - 120	102
LB262607.002	Arsenic, As	mg/kg	1	340	318.22	80 - 120	108
	Cadmium, Cd	mg/kg	0.3	4.7	4.81	70 - 130	97
	Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	107
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	112
	Nickel, Ni	mg/kg	0.5	200	187	80 - 120	105
	Lead, Pb	mg/kg	1	96	89.9	80 - 120	107
	Zinc, Zn	mg/kg	2	290	273	80 - 120	106
LB262946.002	Arsenic, As	mg/kg	1	320	318.22	80 - 120	100
	Cadmium, Cd	mg/kg	0.3	4.0	4.81	70 - 130	83
	Chromium, Cr	mg/kg	0.5	38	38.31	80 - 120	99
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	105
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	98
	Lead, Pb	mg/kg	1	90	89.9	80 - 120	101
	Zinc, Zn	mg/kg	2	270	273	80 - 120	99

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

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

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE238483.098	LB262946.004	Arsenic, As	mg/kg	1	48	4	50	88
		Cadmium, Cd	mg/kg	0.3	41	<0.3	50	83
		Chromium, Cr	mg/kg	0.5	52	8.9	50	85
		Copper, Cu	mg/kg	0.5	53	9.7	50	87
		Nickel, Ni	mg/kg	0.5	46	2.9	50	87
		Lead, Pb	mg/kg	1	47	4	50	84
		Zinc, Zn	mg/kg	2	62	20	50	83
SE238484.001	LB262603.004	Arsenic, As	mg/kg	1	53	3	50	98
		Cadmium, Cd	mg/kg	0.3	45	<0.3	50	90
		Chromium, Cr	mg/kg	0.5	51	3.4	50	95
		Copper, Cu	mg/kg	0.5	57	9.5	50	95
		Nickel, Ni	mg/kg	0.5	51	3.5	50	94
		Lead, Pb	mg/kg	1	51	5	50	92
		Zinc, Zn	mg/kg	2	71	36	50	72
SE238484.020	LB262604.004	Arsenic, As	mg/kg	1	50	5	50	90
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	87
		Chromium, Cr	mg/kg	0.5	91	52	50	77
		Copper, Cu	mg/kg	0.5	85	40	50	91
		Nickel, Ni	mg/kg	0.5	60	18	50	85
		Lead, Pb	mg/kg	1	53	8	50	90
		Zinc, Zn	mg/kg	2	68	31	50	75
SE238484.039	LB262605.004	Arsenic, As	mg/kg	1	49	5	50	87
		Cadmium, Cd	mg/kg	0.3	43	<0.3	50	86
		Chromium, Cr	mg/kg	0.5	85	45	50	79
		Copper, Cu	mg/kg	0.5	75	31	50	89
		Nickel, Ni	mg/kg	0.5	54	11	50	87
		Lead, Pb	mg/kg	1	48	5	50	87
		Zinc, Zn	mg/kg	2	80	40	50	80
SE238484.058	LB262606.004	Arsenic, As	mg/kg	1	53	10	50	85
		Cadmium, Cd	mg/kg	0.3	43	<0.3	50	87
		Chromium, Cr	mg/kg	0.5	68	29	50	77
		Copper, Cu	mg/kg	0.5	76	35	50	81
		Nickel, Ni	mg/kg	0.5	51	7.6	50	87
		Lead, Pb	mg/kg	1	52	9	50	85
		Zinc, Zn	mg/kg	2	84	48	50	71
SE238484.077	LB262607.004	Arsenic, As	mg/kg	1	54	9	50	91
		Cadmium, Cd	mg/kg	0.3	48	<0.3	50	97
		Chromium, Cr	mg/kg	0.5	67	23	50	89
		Copper, Cu	mg/kg	0.5	94	55	50	77
		Nickel, Ni	mg/kg	0.5	56	9.1	50	94
		Lead, Pb	mg/kg	1	53	8	50	92
		Zinc, Zn	mg/kg	2	89	53	50	73

MATRIX SPIKE DUPLICATES

SE238484 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

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

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

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

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

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.

Chain of Custody Form – Ref 13592-2

Ref:	**13592-2**
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800
Telephone:	(02) 6361 4954
Facsimile:	(02) 6360 3960
Email:	felipe@envirowest.net.au
Contact Person:	Felipe Canavez
Invoice:	accounts@envirowest.net.au
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015
Quotation #:	Envir_70119_2019
Courier/CN:	Grants Express

	Sample ID	Container*	Sampling Date/Time	Sample matrix: Water	Soil	Sludge	Sample preservation: Cool	HNO3/HCl	Unpreserved	Analysis: SGS Method Code: CL1T 7 metals (total)	pH	CEC Cation exchange capacity	Clay content Clay content	
1	GC96	A	27/10/2022		X		X		X	X				
2	GC97	A	27/10/2022		X		X		X	X				
3	GC98	A	27/10/2022		X		X		X	X				
4	GC99	A	27/10/2022		X		X		X	X				
5	GC100	A	27/10/2022		X		X		X	X				
6	GC101	A	27/10/2022		X		X		X	X				
7	GC102	A	27/10/2022		X		X		X	X				
8	GC103	A	27/10/2022		X		X		X	X				
9	GC104	A	27/10/2022		X		X		X	X				
10	GC105	A	27/10/2022		X		X		X	X				
11	GC106	A	27/10/2022		X		X		X	X				
12	GC107	A	27/10/2022		X		X		X	X				
13	GC108	A	27/10/2022		X		X		X	X	X	X	X	
14	GC113	A	27/10/2022		X		X		X	X				
15	GC114	A	27/10/2022		X		X		X	X				
16	GC115	A	27/10/2022		X		X		X	X				
17	GC116	A	27/10/2022		X		X		X	X				
18	GC117	A	27/10/2022		X		X		X	X				
19	GC121	A	28/10/2022		X		X		X	X				

SGS EHS Sydney COC

SE238484

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler name: Felipe Canavez
Date: 31/10/2022 Time: 1400

Relinquished by: (print and signature) Virginia Bragg Date 31/10/2022 Time 1400

Received by: (print and signature) Date 01/11/22 Time @ 7.10

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

Chain of Custody Form – Ref 13592-2

Ref:	**13592-2**		**Sample matrix**			**Sample preservation**			**Analysis**							
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**							
Telephone:	(02) 6361 4954								**CL1T**	**pH**	**CEC**	**Clay content**				
Facsimile:	(02) 6360 3960															
Email:	felipe@envirowest.net.au															
Contact Person:	Felipe Canavez															
Invoice:	accounts@envirowest.net.au															
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)	pH	Cation exchange capacity	Clay content				
Quotation #:	Envir_70119_2019															
Courier/CN:	Grants Express															
	Sample ID	**Container***	**Sampling Date/Time**													
20	GC122	A	28/10/2022		X			X	X							
21	GC123	A	28/10/2022		X			X	X							
22	GC124	A	28/10/2022		X			X	X							
23	GC125	A	28/10/2022		X			X	X							
24	GC126	A	28/10/2022		X			X	X							
25	GC127	A	28/10/2022		X			X	X							
26	GC128	A	28/10/2022		X			X	X							
27	GC129	A	28/10/2022		X			X	X							
28	GC130	A	28/10/2022		X			X	X							
29	GC131	A	28/10/2022		X			X	X							
30	GC132	A	28/10/2022		X			X	X							
31	GC133	A	28/10/2022		X			X	X							
32	GC134	A	28/10/2022		X			X	X							
33	GC135	A	28/10/2022		X			X	X							
34	GC136	A	28/10/2022		X			X	X							
35	GC137	A	28/10/2022		X			X	X							
36	GC138	A	28/10/2022		X			X	X							
37	GC139	A	28/10/2022		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: 31/10/2022 Time: 1400

Relinquished by: (print and signature) Virginia Bragg Date 31/10/2022 Time 1400

Received by: (print and signature) Date Time 01/11/22 @ 7:10

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Chain of Custody Form – Ref 13592-2

Ref:	**13592-2**		**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**					
Telephone:	(02) 6361 4954								**CL1T**	**pH**	**CEC**	**Clay content**		
Facsimile:	(02) 6360 3960													
Email:	felipe@envirowest.net.au													
Contact Person:	Felipe Canavez													
Invoice:	accounts@envirowest.net.au													
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)	pH	Cation exchange capacity	Clay content		
Quotation #:	Envir_70119_2019													
Courier/CN:	Grants Express													
	Sample ID	**Container***	**Sampling Date/Time**											
38	GC140	A	28/10/2022		X			X	X					
39	GC141	A	28/10/2022		X			X	X					
40	GC142	A	28/10/2022		X			X	X					
41	GC143	A	28/10/2022		X			X	X					
42	GC144	A	28/10/2022		X			X	X					
43	GC145	A	28/10/2022		X			X	X					
44	GC146	A	28/10/2022		X			X	X					
45	GC147	A	28/10/2022		X			X	X					
46	GC148	A	28/10/2022		X			X	X					
47	GC149	A	28/10/2022		X			X	X					
48	GC150	A	28/10/2022		X			X	X					
49	GC151	A	28/10/2022		X			X	X					
50	GC152	A	28/10/2022		X			X	X					
51	GC153	A	28/10/2022		X			X	X					
52	GC154	A	28/10/2022		X			X	X					
53	GC155	A	28/10/2022		X			X	X					
54	GC156	A	28/10/2022		X			X	X					
55	GC157	A	28/10/2022		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: 31/10/2022 Time: 1400								
Relinquished by: (print and signature)	Virginia Bragg		Date 31/10/2022		Time 1400	Received by: (print and signature)			Date		Time			
						B. Rubaray			01/11/22		@ 7:10			

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Chain of Custody Form – Ref 13592-2

Ref:	**13592-2**		**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**					
Telephone:	(02) 6361 4954								**CL1T**	**pH**	**CEC**	**Clay content**		
Facsimile:	(02) 6360 3960													
Email:	felipe@envirowest.net.au													
Contact Person:	Felipe Canavez													
Invoice:	accounts@envirowest.net.au													
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)	pH	Cation exchange capacity	Clay content		
Quotation #:	Envir_70119_2019													
Courier/CN:	Grants Express													
	Sample ID	**Container***	**Sampling Date/Time**											
56	GC158	A	28/10/2022		X		X		X	X				
57	GC159	A	28/10/2022		X		X		X	X				
58	GC160	A	28/10/2022		X		X		X	X				
59	GC161	A	28/10/2022		X		X		X	X				
60	GC162	A	28/10/2022		X		X		X	X				
61	GC163	A	28/10/2022		X		X		X	X				
62	GC164	A	28/10/2022		X		X		X	X				
63	GC165	A	28/10/2022		X		X		X	X				
64	GC166	A	28/10/2022		X		X		X	X				
65	GC167	A	28/10/2022		X		X		X	X				
66	GC168	A	28/10/2022		X		X		X	X				
67	GC169	A	28/10/2022		X		X		X	X				
68	GC170	A	28/10/2022		X		X		X	X				
69	GC171	A	28/10/2022		X		X		X	X				
70	GC172	A	28/10/2022		X		X		X	X				
71	GC173	A	28/10/2022		X		X		X	X				
72	GC174	A	28/10/2022		X		X		X	X				
73	GC175	A	28/10/2022		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: 31/10/2022 Time: 1400

Relinquished by: (print and signature) Virginia Bragg Date 31/10/2022 Time 1400

Received by: (print and signature) Date 01/11/22 Time @ 7:10

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Chain of Custody Form – Ref 13592-2

Ref:	**13592-2**		**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**					
Telephone:	(02) 6361 4954								**CL1T**	**pH**	**CEC**	**Clay content**		
Facsimile:	(02) 6360 3960													
Email:	felipe@envirowest.net.au													
Contact Person:	Felipe Canavez													
Invoice:	accounts@envirowest.net.au													
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)	pH	Cation exchange capacity	Clay content		
Quotation #:	Envir_70119_2019													
Courier/CN:	Grants Express													
	Sample ID	**Container***	**Sampling Date/Time**											
74	GC176	A	28/10/2022		X		X		X	X				
75	GC177	A	28/10/2022		X		X		X	X				
76	GC178	A	28/10/2022		X		X		X	X				
77	GC179	A	28/10/2022		X		X		X	X				
78	GC180	A	28/10/2022		X		X		X	X				
79	GC181	A	28/10/2022		X		X		X	X				
80	GC182	A	28/10/2022		X		X		X	X				
81	GC183	A	28/10/2022		X		X		X	X				
82	GC184	A	28/10/2022		X		X		X	X				
83	GC185	A	28/10/2022		X		X		X	X				
84	GC186	A	28/10/2022		X		X		X	X				
85	GC187	A	28/10/2022		X		X		X	X				
86	GC188	A	28/10/2022		X		X		X	X				
87	GC189	A	28/10/2022		X		X		X	X				
88	GC190	A	28/10/2022		X		X		X	X				
89	GC191	A	28/10/2022		X		X		X	X				
90	GC192	A	28/10/2022		X		X		X	X				
91	GC193	A	28/10/2022		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: 31/10/2022 Time: 1400

Relinquished by: (print and signature) Virginia Bragg Date 31/10/2022 Time 1400

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Chain of Custody Form – Ref 13592-2

Ref:	**13592-2**		**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**					
Telephone:	(02) 6361 4954								**CL1T**	**pH**	**CEC**	**Clay content**		
Facsimile:	(02) 6360 3960													
Email:	felipe@envirowest.net.au													
Contact Person:	Felipe Canavez													
Invoice:	accounts@envirowest.net.au													
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)	pH	Cation exchange capacity	Clay content		
Quotation #:	Envir_70119_2019													
Courier/CN:	Grants Express													
	Sample ID	**Container***	**Sampling Date/Time**											
92	GC194	A	28/10/2022		X		X		X	X				
93	GC195	A	28/10/2022		X		X		X	X				
94	GC196	A	28/10/2022		X		X		X	X				
95	GC197	A	28/10/2022		X		X		X	X				
96	GC198	A	28/10/2022		X		X		X	X				
97	GC199	A	28/10/2022		X		X		X	X				
98	GC200	A	28/10/2022		X		X		X	X				
99	DA6	A	27/10/2022		X		X		X	X				
100	DA7	A	28/10/2022		X		X		X	X				
101	DA8	A	28/10/2022		X		X		X	X				
102	DA9	A	28/10/2022		X		X		X	X				
103	DA10	A	28/10/2022		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: 31/10/2022 Time: 1400

Relinquished by: Virginia Bragg (print and signature) Date 31/10/2022 Time 1400

Received by: (print and signature) Date 01/11/22 Time @ 7:10

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	61 2 63614954
Facsimile	(Not specified)
Email	felipe@envirowest.net.au
Project	**13592-3**
Order Number	**13592-3**
Samples	100

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE238485 R0**
Date Received	1/11/2022
Date Reported	2/12/2022

COMMENTS

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

% Clay subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146. Report No. CE163167.

SIGNATORIES

Dong LIANG
Metals/Inorganics Team Leader

Huong CRAWFORD
Production Manager

Kamrul AHSAN
Senior Chemist

Shane MCDERMOTT
Inorganic/Metals Chemist

pH in soil (1:5) [AN101] Tested: 2/11/2022

PARAMETER	UOM	LOR	GC218 SOIL - 28/10/2022 SE238485.018
pH	pH Units	0.1	**6.2**

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) [AN122] Tested: 11/11/2022

PARAMETER	UOM	LOR	GC218 SOIL - 28/10/2022 SE238485.018
Exchangeable Calcium, Ca	mg/kg	2	**2300**
Exchangeable Calcium, Ca	meq/100g	0.01	**12**
Exchangeable Calcium Percentage*	%	0.1	**75.0**
Exchangeable Potassium, K	mg/kg	2	**300**
Exchangeable Potassium, K	meq/100g	0.01	**0.77**
Exchangeable Potassium Percentage*	%	0.1	**5.0**
Exchangeable Magnesium, Mg	mg/kg	2	**360**
Exchangeable Magnesium, Mg	meq/100g	0.02	**3.0**
Exchangeable Magnesium Percentage*	%	0.1	**19.1**
Exchangeable Sodium, Na	mg/kg	2	**30**
Exchangeable Sodium, Na	meq/100g	0.01	**0.13**
Exchangeable Sodium Percentage*	%	0.1	**0.8**
Cation Exchange Capacity	meq/100g	0.02	**15**

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 7/11/2022

PARAMETER	UOM	LOR	GC201 SOIL - 28/10/2022 SE238485.001	GC202 SOIL - 28/10/2022 SE238485.002	GC203 SOIL - 28/10/2022 SE238485.003	GC204 SOIL - 28/10/2022 SE238485.004	GC205 SOIL - 28/10/2022 SE238485.005
Arsenic, As	mg/kg	1	15	14	17	15	17
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	25	25	39	29	25
Copper, Cu	mg/kg	0.5	80	81	84	70	85
Lead, Pb	mg/kg	1	6	6	7	7	6
Nickel, Ni	mg/kg	0.5	12	12	14	9.5	12
Zinc, Zn	mg/kg	2	57	59	50	49	52

PARAMETER	UOM	LOR	GC206 SOIL - 28/10/2022 SE238485.006	GC207 SOIL - 28/10/2022 SE238485.007	GC208 SOIL - 28/10/2022 SE238485.008	GC209 SOIL - 28/10/2022 SE238485.009	GC210 SOIL - 28/10/2022 SE238485.010
Arsenic, As	mg/kg	1	18	14	11	14	14
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	23	29	21	24	26
Copper, Cu	mg/kg	0.5	82	69	55	67	72
Lead, Pb	mg/kg	1	6	6	6	6	6
Nickel, Ni	mg/kg	0.5	10	11	7.9	10	11
Zinc, Zn	mg/kg	2	54	52	50	55	61

PARAMETER	UOM	LOR	GC211 SOIL - 28/10/2022 SE238485.011	GC212 SOIL - 28/10/2022 SE238485.012	GC213 SOIL - 28/10/2022 SE238485.013	GC214 SOIL - 28/10/2022 SE238485.014	GC215 SOIL - 28/10/2022 SE238485.015
Arsenic, As	mg/kg	1	10	14	9	14	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	21	22	23	23	32
Copper, Cu	mg/kg	0.5	53	71	58	68	53
Lead, Pb	mg/kg	1	6	5	6	6	7
Nickel, Ni	mg/kg	0.5	8.5	11	9.9	14	21
Zinc, Zn	mg/kg	2	58	63	60	60	65

PARAMETER	UOM	LOR	GC216 SOIL - 28/10/2022 SE238485.016	GC217 SOIL - 28/10/2022 SE238485.017	GC218 SOIL - 28/10/2022 SE238485.018	GC219 SOIL - 28/10/2022 SE238485.019	GC220 SOIL - 28/10/2022 SE238485.020
Arsenic, As	mg/kg	1	6	7	8	9	7
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	23	22	22	27	31
Copper, Cu	mg/kg	0.5	43	39	48	53	55
Lead, Pb	mg/kg	1	5	4	5	6	5
Nickel, Ni	mg/kg	0.5	15	14	12	14	14
Zinc, Zn	mg/kg	2	67	73	62	68	56

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 7/11/2022

(continued)

PARAMETER	UOM	LOR	GC221 SOIL - 28/10/2022 SE238485.021	GC222 SOIL - 28/10/2022 SE238485.022	GC223 SOIL - 28/10/2022 SE238485.023	GC224 SOIL - 28/10/2022 SE238485.024	GC225 SOIL - 28/10/2022 SE238485.025
Arsenic, As	mg/kg	1	16	16	10	10	13
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	30	32	29	30	36
Copper, Cu	mg/kg	0.5	77	76	67	56	69
Lead, Pb	mg/kg	1	7	7	5	6	5
Nickel, Ni	mg/kg	0.5	14	13	17	15	19
Zinc, Zn	mg/kg	2	57	71	52	59	56

PARAMETER	UOM	LOR	GC226 SOIL - 28/10/2022 SE238485.026	GC227 SOIL - 28/10/2022 SE238485.027	GC228 SOIL - 28/10/2022 SE238485.028	GC230 SOIL - 28/10/2022 SE238485.029	GC231 SOIL - 28/10/2022 SE238485.030
Arsenic, As	mg/kg	1	9	16	11	8	9
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	30	53	31	36	35
Copper, Cu	mg/kg	0.5	54	72	60	45	56
Lead, Pb	mg/kg	1	5	6	4	6	6
Nickel, Ni	mg/kg	0.5	12	39	15	13	15
Zinc, Zn	mg/kg	2	58	57	57	56	57

PARAMETER	UOM	LOR	GC232 SOIL - 28/10/2022 SE238485.031	GC233 SOIL - 28/10/2022 SE238485.032	GC234 SOIL - 28/10/2022 SE238485.033	GC235 SOIL - 28/10/2022 SE238485.034	GC236 SOIL - 28/10/2022 SE238485.035
Arsenic, As	mg/kg	1	7	9	6	10	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	37	35	26	17	27
Copper, Cu	mg/kg	0.5	51	66	44	40	40
Lead, Pb	mg/kg	1	5	5	5	4	5
Nickel, Ni	mg/kg	0.5	17	14	12	11	13
Zinc, Zn	mg/kg	2	62	54	57	72	70

PARAMETER	UOM	LOR	GC237 SOIL - 28/10/2022 SE238485.036	GC238 SOIL - 28/10/2022 SE238485.037	GC239 SOIL - 28/10/2022 SE238485.038	GC240 SOIL - 28/10/2022 SE238485.039	GC241 SOIL - 28/10/2022 SE238485.040
Arsenic, As	mg/kg	1	6	7	6	10	9
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	23	24	40	32	38
Copper, Cu	mg/kg	0.5	42	56	54	74	58
Lead, Pb	mg/kg	1	5	5	5	7	8
Nickel, Ni	mg/kg	0.5	13	15	19	15	16
Zinc, Zn	mg/kg	2	72	62	60	69	57

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 7/11/2022

(continued)

PARAMETER	UOM	LOR	GC242 SOIL - 28/10/2022 SE238485.041	GC243 SOIL - 28/10/2022 SE238485.042	GC244 SOIL - 28/10/2022 SE238485.043	GC245 SOIL - 28/10/2022 SE238485.044	GC246 SOIL - 28/10/2022 SE238485.045
Arsenic, As	mg/kg	1	7	7	8	17	20
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	22	38	38	49	38
Copper, Cu	mg/kg	0.5	52	43	50	72	69
Lead, Pb	mg/kg	1	5	6	5	6	7
Nickel, Ni	mg/kg	0.5	12	13	14	14	13
Zinc, Zn	mg/kg	2	55	59	50	59	55

PARAMETER	UOM	LOR	GC247 SOIL - 28/10/2022 SE238485.046	GC248 SOIL - 28/10/2022 SE238485.047	GC249 SOIL - 28/10/2022 SE238485.048	GC250 SOIL - 28/10/2022 SE238485.049	GC251 SOIL - 28/10/2022 SE238485.050
Arsenic, As	mg/kg	1	4	6	5	6	8
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	20	33	17	19	20
Copper, Cu	mg/kg	0.5	42	38	46	47	57
Lead, Pb	mg/kg	1	7	11	7	7	7
Nickel, Ni	mg/kg	0.5	12	11	10	10	12
Zinc, Zn	mg/kg	2	53	35	51	57	56

PARAMETER	UOM	LOR	GC252 SOIL - 28/10/2022 SE238485.051	GC253 SOIL - 28/10/2022 SE238485.052	GC254 SOIL - 28/10/2022 SE238485.053	GC255 SOIL - 28/10/2022 SE238485.054	GC256 SOIL - 28/10/2022 SE238485.055
Arsenic, As	mg/kg	1	5	9	12	5	7
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	12	22	26	15	15
Copper, Cu	mg/kg	0.5	40	60	70	54	88
Lead, Pb	mg/kg	1	5	7	7	5	5
Nickel, Ni	mg/kg	0.5	8.7	12	12	10	11
Zinc, Zn	mg/kg	2	53	73	71	70	70

PARAMETER	UOM	LOR	GC257 SOIL - 28/10/2022 SE238485.056	GC258 SOIL - 28/10/2022 SE238485.057	GC259 SOIL - 28/10/2022 SE238485.058	GC260 SOIL - 28/10/2022 SE238485.059	GC261 SOIL - 28/10/2022 SE238485.060
Arsenic, As	mg/kg	1	5	5	5	4	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	14	13	18	20	33
Copper, Cu	mg/kg	0.5	68	54	52	46	53
Lead, Pb	mg/kg	1	6	5	6	5	10
Nickel, Ni	mg/kg	0.5	10	8.4	11	12	16
Zinc, Zn	mg/kg	2	68	65	61	60	48

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 7/11/2022

(continued)

PARAMETER	UOM	LOR	GC262 SOIL - 28/10/2022 SE238485.061	GC263 SOIL - 28/10/2022 SE238485.062	GC264 SOIL - 28/10/2022 SE238485.063	GC265 SOIL - 28/10/2022 SE238485.064	GC266 SOIL - 28/10/2022 SE238485.065
Arsenic, As	mg/kg	1	5	3	5	9	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	31	20	21	34	21
Copper, Cu	mg/kg	0.5	44	59	36	72	60
Lead, Pb	mg/kg	1	8	5	6	5	6
Nickel, Ni	mg/kg	0.5	13	14	10	18	13
Zinc, Zn	mg/kg	2	49	40	54	58	70

PARAMETER	UOM	LOR	GC267 SOIL - 28/10/2022 SE238485.066	GC268 SOIL - 28/10/2022 SE238485.067	GC269 SOIL - 28/10/2022 SE238485.068	GC270 SOIL - 28/10/2022 SE238485.069	GC271 SOIL - 28/10/2022 SE238485.070
Arsenic, As	mg/kg	1	5	9	9	8	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	12	11	11	14	26
Copper, Cu	mg/kg	0.5	55	76	85	91	74
Lead, Pb	mg/kg	1	5	5	5	7	6
Nickel, Ni	mg/kg	0.5	8.7	9.5	9.3	9.5	14
Zinc, Zn	mg/kg	2	64	58	60	60	60

PARAMETER	UOM	LOR	GC272 SOIL - 28/10/2022 SE238485.071	GC273 SOIL - 28/10/2022 SE238485.072	GC274 SOIL - 28/10/2022 SE238485.073	GC275 SOIL - 28/10/2022 SE238485.074	GC276 SOIL - 28/10/2022 SE238485.075
Arsenic, As	mg/kg	1	7	14	7	6	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	8.2	11	11	28	30
Copper, Cu	mg/kg	0.5	77	89	64	70	80
Lead, Pb	mg/kg	1	5	7	4	5	5
Nickel, Ni	mg/kg	0.5	8.4	9.6	8.1	16	17
Zinc, Zn	mg/kg	2	53	65	54	79	63

PARAMETER	UOM	LOR	GC277 SOIL - 28/10/2022 SE238485.076	GC278 SOIL - 28/10/2022 SE238485.077	GC279 SOIL - 28/10/2022 SE238485.078	GC280 SOIL - 28/10/2022 SE238485.079	GC281 SOIL - 28/10/2022 SE238485.080
Arsenic, As	mg/kg	1	4	5	4	4	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	29	27	24	27	34
Copper, Cu	mg/kg	0.5	58	45	40	55	57
Lead, Pb	mg/kg	1	5	5	5	5	5
Nickel, Ni	mg/kg	0.5	15	12	11	13	19
Zinc, Zn	mg/kg	2	50	48	52	50	50

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 7/11/2022

(continued)

PARAMETER	UOM	LOR	GC282 SOIL - 28/10/2022 SE238485.081	GC283 SOIL - 28/10/2022 SE238485.082	GC284 SOIL - 28/10/2022 SE238485.083	GC285 SOIL - 28/10/2022 SE238485.084	GC286 SOIL - 28/10/2022 SE238485.085
Arsenic, As	mg/kg	1	6	5	5	6	7
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	31	40	29	31	35
Copper, Cu	mg/kg	0.5	75	51	49	60	64
Lead, Pb	mg/kg	1	5	6	4	4	5
Nickel, Ni	mg/kg	0.5	16	14	12	15	15
Zinc, Zn	mg/kg	2	47	63	47	56	55

PARAMETER	UOM	LOR	GC287 SOIL - 28/10/2022 SE238485.086	GC288 SOIL - 28/10/2022 SE238485.087	GC289 SOIL - 28/10/2022 SE238485.088	GC290 SOIL - 28/10/2022 SE238485.089	GC291 SOIL - 28/10/2022 SE238485.090
Arsenic, As	mg/kg	1	4	6	8	4	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	16	13	23	19	21
Copper, Cu	mg/kg	0.5	57	57	68	53	45
Lead, Pb	mg/kg	1	4	5	5	5	5
Nickel, Ni	mg/kg	0.5	9.1	8.1	10	17	13
Zinc, Zn	mg/kg	2	57	59	63	57	63

PARAMETER	UOM	LOR	GC292 SOIL - 28/10/2022 SE238485.091	GC293 SOIL - 28/10/2022 SE238485.092	GC294 SOIL - 28/10/2022 SE238485.093	GC295 SOIL - 28/10/2022 SE238485.094	GC296 SOIL - 28/10/2022 SE238485.095
Arsenic, As	mg/kg	1	5	5	4	5	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	20	11	16	36	25
Copper, Cu	mg/kg	0.5	44	44	41	67	45
Lead, Pb	mg/kg	1	5	4	4	5	5
Nickel, Ni	mg/kg	0.5	11	7.9	9.5	16	13
Zinc, Zn	mg/kg	2	56	56	53	63	58

PARAMETER	UOM	LOR	DA11 SOIL - 28/10/2022 SE238485.096	DA12 SOIL - 28/10/2022 SE238485.097	DA13 SOIL - 28/10/2022 SE238485.098	DA14 SOIL - 28/10/2022 SE238485.099	DA15 SOIL - 28/10/2022 SE238485.100
Arsenic, As	mg/kg	1	15	14	11	5	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	26	25	41	34	35
Copper, Cu	mg/kg	0.5	83	70	65	54	60
Lead, Pb	mg/kg	1	6	6	9	9	6
Nickel, Ni	mg/kg	0.5	13	12	19	15	18
Zinc, Zn	mg/kg	2	65	53	63	47	51

Moisture Content [AN002] Tested: 7/11/2022

PARAMETER	UOM	LOR	GC201 SOIL - 28/10/2022 SE238485.001	GC202 SOIL - 28/10/2022 SE238485.002	GC203 SOIL - 28/10/2022 SE238485.003	GC204 SOIL - 28/10/2022 SE238485.004	GC205 SOIL - 28/10/2022 SE238485.005
% Moisture	%w/w	1	29.0	34.2	27.2	32.9	25.9

PARAMETER	UOM	LOR	GC206 SOIL - 28/10/2022 SE238485.006	GC207 SOIL - 28/10/2022 SE238485.007	GC208 SOIL - 28/10/2022 SE238485.008	GC209 SOIL - 28/10/2022 SE238485.009	GC210 SOIL - 28/10/2022 SE238485.010
% Moisture	%w/w	1	24.9	18.9	27.2	29.4	31.3

PARAMETER	UOM	LOR	GC211 SOIL - 28/10/2022 SE238485.011	GC212 SOIL - 28/10/2022 SE238485.012	GC213 SOIL - 28/10/2022 SE238485.013	GC214 SOIL - 28/10/2022 SE238485.014	GC215 SOIL - 28/10/2022 SE238485.015
% Moisture	%w/w	1	28.1	31.7	28.0	22.8	23.8

PARAMETER	UOM	LOR	GC216 SOIL - 28/10/2022 SE238485.016	GC217 SOIL - 28/10/2022 SE238485.017	GC218 SOIL - 28/10/2022 SE238485.018	GC219 SOIL - 28/10/2022 SE238485.019	GC220 SOIL - 28/10/2022 SE238485.020
% Moisture	%w/w	1	25.6	27.5	28.5	34.8	23.7

PARAMETER	UOM	LOR	GC221 SOIL - 28/10/2022 SE238485.021	GC222 SOIL - 28/10/2022 SE238485.022	GC223 SOIL - 28/10/2022 SE238485.023	GC224 SOIL - 28/10/2022 SE238485.024	GC225 SOIL - 28/10/2022 SE238485.025
% Moisture	%w/w	1	31.5	33.1	24.9	28.0	26.9

PARAMETER	UOM	LOR	GC226 SOIL - 28/10/2022 SE238485.026	GC227 SOIL - 28/10/2022 SE238485.027	GC228 SOIL - 28/10/2022 SE238485.028	GC230 SOIL - 28/10/2022 SE238485.029	GC231 SOIL - 28/10/2022 SE238485.030
% Moisture	%w/w	1	24.3	26.2	27.2	24.4	21.6

PARAMETER	UOM	LOR	GC232 SOIL - 28/10/2022 SE238485.031	GC233 SOIL - 28/10/2022 SE238485.032	GC234 SOIL - 28/10/2022 SE238485.033	GC235 SOIL - 28/10/2022 SE238485.034	GC236 SOIL - 28/10/2022 SE238485.035
% Moisture	%w/w	1	28.7	36.3	28.5	27.8	26.1

Moisture Content [AN002] Tested: 7/11/2022 (continued)

PARAMETER	UOM	LOR	GC237 SOIL - 28/10/2022 SE238485.036	GC238 SOIL - 28/10/2022 SE238485.037	GC239 SOIL - 28/10/2022 SE238485.038	GC240 SOIL - 28/10/2022 SE238485.039	GC241 SOIL - 28/10/2022 SE238485.040
% Moisture	%w/w	1	40.3	26.6	26.3	25.9	24.4

PARAMETER	UOM	LOR	GC242 SOIL - 28/10/2022 SE238485.041	GC243 SOIL - 28/10/2022 SE238485.042	GC244 SOIL - 28/10/2022 SE238485.043	GC245 SOIL - 28/10/2022 SE238485.044	GC246 SOIL - 28/10/2022 SE238485.045
% Moisture	%w/w	1	25.8	28.5	23.9	22.9	22.3

PARAMETER	UOM	LOR	GC247 SOIL - 28/10/2022 SE238485.046	GC248 SOIL - 28/10/2022 SE238485.047	GC249 SOIL - 28/10/2022 SE238485.048	GC250 SOIL - 28/10/2022 SE238485.049	GC251 SOIL - 28/10/2022 SE238485.050
% Moisture	%w/w	1	30.4	23.7	29.2	24.6	26.4

PARAMETER	UOM	LOR	GC252 SOIL - 28/10/2022 SE238485.051	GC253 SOIL - 28/10/2022 SE238485.052	GC254 SOIL - 28/10/2022 SE238485.053	GC255 SOIL - 28/10/2022 SE238485.054	GC256 SOIL - 28/10/2022 SE238485.055
% Moisture	%w/w	1	31.6	19.4	33.2	25.7	24.1

PARAMETER	UOM	LOR	GC257 SOIL - 28/10/2022 SE238485.056	GC258 SOIL - 28/10/2022 SE238485.057	GC259 SOIL - 28/10/2022 SE238485.058	GC260 SOIL - 28/10/2022 SE238485.059	GC261 SOIL - 28/10/2022 SE238485.060
% Moisture	%w/w	1	23.8	24.9	30.2	29.8	22.7

PARAMETER	UOM	LOR	GC262 SOIL - 28/10/2022 SE238485.061	GC263 SOIL - 28/10/2022 SE238485.062	GC264 SOIL - 28/10/2022 SE238485.063	GC265 SOIL - 28/10/2022 SE238485.064	GC266 SOIL - 28/10/2022 SE238485.065
% Moisture	%w/w	1	23.2	27.5	32.1	21.5	34.5

PARAMETER	UOM	LOR	GC267 SOIL - 28/10/2022 SE238485.066	GC268 SOIL - 28/10/2022 SE238485.067	GC269 SOIL - 28/10/2022 SE238485.068	GC270 SOIL - 28/10/2022 SE238485.069	GC271 SOIL - 28/10/2022 SE238485.070
% Moisture	%w/w	1	26.6	26.5	29.3	39.7	37.9

Moisture Content [AN002] Tested: 7/11/2022 (continued)

PARAMETER	UOM	LOR	GC272 SOIL - 28/10/2022 SE238485.071	GC273 SOIL - 28/10/2022 SE238485.072	GC274 SOIL - 28/10/2022 SE238485.073	GC275 SOIL - 28/10/2022 SE238485.074	GC276 SOIL - 28/10/2022 SE238485.075
% Moisture	%w/w	1	26.3	26.3	23.3	31.4	24.3

PARAMETER	UOM	LOR	GC277 SOIL - 28/10/2022 SE238485.076	GC278 SOIL - 28/10/2022 SE238485.077	GC279 SOIL - 28/10/2022 SE238485.078	GC280 SOIL - 28/10/2022 SE238485.079	GC281 SOIL - 28/10/2022 SE238485.080
% Moisture	%w/w	1	22.9	25.9	29.4	24.4	21.7

PARAMETER	UOM	LOR	GC282 SOIL - 28/10/2022 SE238485.081	GC283 SOIL - 28/10/2022 SE238485.082	GC284 SOIL - 28/10/2022 SE238485.083	GC285 SOIL - 28/10/2022 SE238485.084	GC286 SOIL - 28/10/2022 SE238485.085
% Moisture	%w/w	1	27.6	37.9	22.9	25.4	29.2

PARAMETER	UOM	LOR	GC287 SOIL - 28/10/2022 SE238485.086	GC288 SOIL - 28/10/2022 SE238485.087	GC289 SOIL - 28/10/2022 SE238485.088	GC290 SOIL - 28/10/2022 SE238485.089	GC291 SOIL - 28/10/2022 SE238485.090
% Moisture	%w/w	1	28.2	33.8	26.8	24.1	32.1

PARAMETER	UOM	LOR	GC292 SOIL - 28/10/2022 SE238485.091	GC293 SOIL - 28/10/2022 SE238485.092	GC294 SOIL - 28/10/2022 SE238485.093	GC295 SOIL - 28/10/2022 SE238485.094	GC296 SOIL - 28/10/2022 SE238485.095
% Moisture	%w/w	1	28.0	30.9	30.3	38.6	29.3

PARAMETER	UOM	LOR	DA11 SOIL - 28/10/2022 SE238485.096	DA12 SOIL - 28/10/2022 SE238485.097	DA13 SOIL - 28/10/2022 SE238485.098	DA14 SOIL - 28/10/2022 SE238485.099	DA15 SOIL - 28/10/2022 SE238485.100
% Moisture	%w/w	1	35.8	28.8	36.4	22.9	22.7

Particle sizing of soils by sieving [AN005] Tested: 2/12/2022

PARAMETER	UOM	LOR	GC218 SOIL - 28/10/2022 SE238485.018
Passing 75µm*	%w/w	1	**71**
Retained 75µm*	%w/w	1	**29**

Particle sizing of soils <75µm by hydrometer [AN005] Tested: 2/12/2022

PARAMETER	UOM	LOR	GC218 SOIL - 28/10/2022 SE238485.018
Clay (<0.002mm)*	%w/w	0.1	**4.0**

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.
AN005	The particle size distribution of a soil is determined by wet sieving, using a maximum of 900 mL of deionised water to sieve all fractions down to 75 µm. Referenced to AS1289.3.6.1 and AS1141.11.
AN005	Following wet sieving of the sample,(particles smaller than 75 µm) a dispersing solution is added and a hydrometer is used to measure sedimentation. Soil density is determined and the percentage of each size fraction calculated. Referenced to AS1289.3.6.3.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode and is calibrated against 3 buffers purchased commercially. For soils, sediments and sludges, an extract with water (or 0.01M CaCl2) is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN122	Exchangeable Cations, CEC and ESP: Soil sample is extracted in 1M Ammonium Acetate at pH=7 (or 1M Ammonium Chloride at pH=7) with cations (Na, K, Ca & Mg) then determined by ICP OES/ICP MS and reported as Exchangeable Cations. For saline soils, these results can be corrected for water soluble cations and reported as Exchangeable cations in meq/100g or soil can be pre-treated (aqueous ethanol/aqueous glycerol) prior to extraction. Cation Exchange Capacity (CEC) is the sum of the exchangeable cations in meq/100g.
AN122	The Exchangeable Sodium Percentage (ESP) is calculated as the exchangeable sodium divided by the CEC (all in meq/100g) times 100. ESP can be used to categorise the sodicity of the soil as below: ESP < 6% non-sodic ESP 6-15% sodic ESP >15% strongly sodic Method is referenced to Rayment and Lyons, 2011, sections 15D3 and 15N1.-

FOOTNOTES

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

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

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

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

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

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

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

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

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

STATEMENT OF QA/QC PERFORMANCE

SE238485 R0

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	61 2 63614954
Facsimile	(Not specified)
Email	felipe@envirowest.net.au
Project	**13592-3**
Order Number	**13592-3**
Samples	100

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE238485 R0**
Date Received	01 Nov 2022
Date Reported	02 Dec 2022

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:

Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	3 items

SAMPLE SUMMARY

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	100 Soil
Date documentation received	1/11/2022	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	14.5°C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

HOLDING TIME SUMMARY

SE238485 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

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC218	SE238485.018	LB263467	28 Oct 2022	01 Nov 2022	25 Nov 2022	11 Nov 2022	25 Nov 2022	11 Nov 2022

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC201	SE238485.001	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC202	SE238485.002	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC203	SE238485.003	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC204	SE238485.004	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC205	SE238485.005	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC206	SE238485.006	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC207	SE238485.007	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC208	SE238485.008	LB262961	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC209	SE238485.009	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC210	SE238485.010	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC211	SE238485.011	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC212	SE238485.012	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC213	SE238485.013	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC214	SE238485.014	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC215	SE238485.015	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC216	SE238485.016	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC217	SE238485.017	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC218	SE238485.018	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC219	SE238485.019	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC220	SE238485.020	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC221	SE238485.021	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC222	SE238485.022	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC223	SE238485.023	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC224	SE238485.024	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC225	SE238485.025	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC226	SE238485.026	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC227	SE238485.027	LB262960	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC228	SE238485.028	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC230	SE238485.029	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC231	SE238485.030	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC232	SE238485.031	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC233	SE238485.032	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC234	SE238485.033	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC235	SE238485.034	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC236	SE238485.035	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC237	SE238485.036	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC238	SE238485.037	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC239	SE238485.038	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC240	SE238485.039	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC241	SE238485.040	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC242	SE238485.041	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC243	SE238485.042	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC244	SE238485.043	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC245	SE238485.044	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC246	SE238485.045	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC247	SE238485.046	LB262962	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC248	SE238485.047	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC249	SE238485.048	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC250	SE238485.049	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC251	SE238485.050	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC252	SE238485.051	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC253	SE238485.052	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC254	SE238485.053	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC255	SE238485.054	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC256	SE238485.055	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022

HOLDING TIME SUMMARY

SE238485 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 (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC257	SE238485.056	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC258	SE238485.057	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC259	SE238485.058	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC260	SE238485.059	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC261	SE238485.060	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC262	SE238485.061	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC263	SE238485.062	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC264	SE238485.063	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC265	SE238485.064	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC266	SE238485.065	LB262963	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC267	SE238485.066	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC268	SE238485.067	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC269	SE238485.068	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC270	SE238485.069	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC271	SE238485.070	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC272	SE238485.071	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC273	SE238485.072	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC274	SE238485.073	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC275	SE238485.074	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC276	SE238485.075	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC277	SE238485.076	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC278	SE238485.077	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC279	SE238485.078	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC280	SE238485.079	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC281	SE238485.080	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC282	SE238485.081	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC283	SE238485.082	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC284	SE238485.083	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC285	SE238485.084	LB262964	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC286	SE238485.085	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC287	SE238485.086	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC288	SE238485.087	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC289	SE238485.088	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC290	SE238485.089	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC291	SE238485.090	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC292	SE238485.091	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC293	SE238485.092	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC294	SE238485.093	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC295	SE238485.094	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC296	SE238485.095	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
DA11	SE238485.096	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
DA12	SE238485.097	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
DA13	SE238485.098	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
DA14	SE238485.099	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
DA15	SE238485.100	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC218	SE238485.018	LB262478	28 Oct 2022	01 Nov 2022	04 Nov 2022	02 Nov 2022	03 Nov 2022	02 Nov 2022

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC201	SE238485.001	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC202	SE238485.002	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC203	SE238485.003	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC204	SE238485.004	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC205	SE238485.005	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC206	SE238485.006	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC207	SE238485.007	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC208	SE238485.008	LB262946	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC209	SE238485.009	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC210	SE238485.010	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC211	SE238485.011	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC212	SE238485.012	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC213	SE238485.013	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC214	SE238485.014	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC215	SE238485.015	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC216	SE238485.016	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC217	SE238485.017	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC218	SE238485.018	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC219	SE238485.019	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC220	SE238485.020	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC221	SE238485.021	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC222	SE238485.022	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC223	SE238485.023	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC224	SE238485.024	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC225	SE238485.025	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC226	SE238485.026	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC227	SE238485.027	LB262947	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC228	SE238485.028	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC230	SE238485.029	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC231	SE238485.030	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC232	SE238485.031	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC233	SE238485.032	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC234	SE238485.033	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC235	SE238485.034	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC236	SE238485.035	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC237	SE238485.036	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC238	SE238485.037	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC239	SE238485.038	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC240	SE238485.039	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC241	SE238485.040	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC242	SE238485.041	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC243	SE238485.042	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC244	SE238485.043	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC245	SE238485.044	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC246	SE238485.045	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC247	SE238485.046	LB262948	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC248	SE238485.047	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC249	SE238485.048	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC250	SE238485.049	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC251	SE238485.050	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC252	SE238485.051	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC253	SE238485.052	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC254	SE238485.053	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC255	SE238485.054	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC256	SE238485.055	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC257	SE238485.056	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC258	SE238485.057	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC259	SE238485.058	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC260	SE238485.059	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC261	SE238485.060	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC262	SE238485.061	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC263	SE238485.062	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC264	SE238485.063	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC265	SE238485.064	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC266	SE238485.065	LB262949	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC267	SE238485.066	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC268	SE238485.067	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC269	SE238485.068	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC270	SE238485.069	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC271	SE238485.070	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC272	SE238485.071	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC273	SE238485.072	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC274	SE238485.073	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC275	SE238485.074	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC276	SE238485.075	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC277	SE238485.076	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC278	SE238485.077	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC279	SE238485.078	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC280	SE238485.079	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC281	SE238485.080	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC282	SE238485.081	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC283	SE238485.082	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC284	SE238485.083	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC285	SE238485.084	LB262950	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC286	SE238485.085	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC287	SE238485.086	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC288	SE238485.087	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC289	SE238485.088	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC290	SE238485.089	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC291	SE238485.090	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC292	SE238485.091	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC293	SE238485.092	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC294	SE238485.093	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC295	SE238485.094	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC296	SE238485.095	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
DA11	SE238485.096	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
DA12	SE238485.097	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
DA13	SE238485.098	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
DA14	SE238485.099	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
DA15	SE238485.100	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022

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

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

No surrogates were required for this job.

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

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

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) — Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result
LB263467.001	Exchangeable Sodium, Na	mg/kg	2	-1.5086
	Exchangeable Potassium, K	mg/kg	2	-0.217
	Exchangeable Calcium, Ca	mg/kg	2	-1.8325
	Exchangeable Magnesium, Mg	mg/kg	2	-0.0921

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

Sample Number	Parameter	Units	LOR	Result
LB262946.001	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
LB262947.001	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
LB262948.001	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
LB262949.001	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
LB262950.001	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
LB262951.001	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

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

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

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

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

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

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238484.102	LB262961.011	% Moisture	%w/w	1	28.6	26.7	34	7
SE238485.008	LB262961.021	% Moisture	%w/w	1	27.2	24.4	34	11
SE238485.018	LB262960.011	% Moisture	%w/w	1	28.5	28.0	34	2
SE238485.027	LB262960.021	% Moisture	%w/w	1	26.2	26.2	34	0
SE238485.037	LB262962.011	% Moisture	%w/w	1	26.6	27.8	34	4
SE238485.046	LB262962.021	% Moisture	%w/w	1	30.4	28.0	33	8
SE238485.056	LB262963.011	% Moisture	%w/w	1	23.8	27.2	34	13
SE238485.065	LB262963.021	% Moisture	%w/w	1	34.5	36.5	33	6
SE238485.075	LB262964.011	% Moisture	%w/w	1	24.3	26.5	34	9
SE238485.084	LB262964.021	% Moisture	%w/w	1	25.4	23.0	34	10
SE238485.094	LB262965.011	% Moisture	%w/w	1	38.6	35.4	33	9
SE238486.003	LB262965.021	% Moisture	%w/w	1	30.1	33.2	33	10

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238418.005	LB262478.013	pH	pH Units	0.1	7.8	7.7	31	2

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 %
SE238484.102	LB262946.014	Arsenic, As	mg/kg	1	6	6	46	1
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	21	19	33	9
		Copper, Cu	mg/kg	0.5	40	38	31	5
		Nickel, Ni	mg/kg	0.5	8.7	8.2	36	5
		Lead, Pb	mg/kg	1	8	8	42	2
		Zinc, Zn	mg/kg	2	55	54	34	3
SE238485.008	LB262946.024	Arsenic, As	mg/kg	1	11	12	39	9
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	21	23	32	8
		Copper, Cu	mg/kg	0.5	55	61	31	10
		Nickel, Ni	mg/kg	0.5	7.9	8.7	36	9
		Lead, Pb	mg/kg	1	6	6	47	8
		Zinc, Zn	mg/kg	2	50	49	34	2
SE238485.018	LB262947.014	Arsenic, As	mg/kg	1	8	8	43	4
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	22	21	32	2
		Copper, Cu	mg/kg	0.5	48	47	31	3
		Nickel, Ni	mg/kg	0.5	12	12	34	2
		Lead, Pb	mg/kg	1	5	5	50	5
		Zinc, Zn	mg/kg	2	62	60	33	4
SE238485.027	LB262947.024	Arsenic, As	mg/kg	1	16	16	36	1
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	153	0
		Chromium, Cr	mg/kg	0.5	53	53	31	1
		Copper, Cu	mg/kg	0.5	72	70	31	2
		Nickel, Ni	mg/kg	0.5	39	36	31	8
		Lead, Pb	mg/kg	1	6	5	48	2
		Zinc, Zn	mg/kg	2	57	56	34	2
SE238485.037	LB262948.014	Arsenic, As	mg/kg	1	7	6	45	20
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	24	22	32	9
		Copper, Cu	mg/kg	0.5	56	52	31	7
		Nickel, Ni	mg/kg	0.5	15	14	34	8
		Lead, Pb	mg/kg	1	5	5	51	7
		Zinc, Zn	mg/kg	2	62	59	33	5
SE238485.046	LB262948.024	Arsenic, As	mg/kg	1	4	4	53	2
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	20	20	32	0
		Copper, Cu	mg/kg	0.5	42	43	31	1
		Nickel, Ni	mg/kg	0.5	12	12	34	6

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

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

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

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

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

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238485.046	LB262948.024	Lead, Pb	mg/kg	1	7	7	44	3
		Zinc, Zn	mg/kg	2	53	54	34	2
SE238485.056	LB262949.014	Arsenic, As	mg/kg	1	5	6	49	8
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	14	15	33	10
		Copper, Cu	mg/kg	0.5	68	57	31	17
		Nickel, Ni	mg/kg	0.5	10	9.5	35	5
		Lead, Pb	mg/kg	1	6	5	48	5
		Zinc, Zn	mg/kg	2	68	69	33	2
SE238485.065	LB262949.024	Arsenic, As	mg/kg	1	4	5	52	4
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	21	20	32	6
		Copper, Cu	mg/kg	0.5	60	57	31	6
		Nickel, Ni	mg/kg	0.5	13	12	34	8
		Lead, Pb	mg/kg	1	6	5	49	7
		Zinc, Zn	mg/kg	2	70	68	33	3
SE238485.075	LB262950.014	Arsenic, As	mg/kg	1	6	6	47	10
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	30	30	32	2
		Copper, Cu	mg/kg	0.5	80	76	31	5
		Nickel, Ni	mg/kg	0.5	17	17	33	1
		Lead, Pb	mg/kg	1	5	4	52	5
		Zinc, Zn	mg/kg	2	63	60	33	5
SE238485.084	LB262950.024	Arsenic, As	mg/kg	1	6	7	45	17
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	31	36	31	17
		Copper, Cu	mg/kg	0.5	60	69	31	15
		Nickel, Ni	mg/kg	0.5	15	18	33	17
		Lead, Pb	mg/kg	1	4	5	52	13
		Zinc, Zn	mg/kg	2	56	59	33	4
SE238485.094	LB262951.014	Arsenic, As	mg/kg	1	5	5	51	7
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	36	34	31	7
		Copper, Cu	mg/kg	0.5	67	64	31	5
		Nickel, Ni	mg/kg	0.5	16	15	33	6
		Lead, Pb	mg/kg	1	5	5	49	0
		Zinc, Zn	mg/kg	2	63	63	33	0
SE238486.003	LB262951.024	Arsenic, As	mg/kg	1	6	6	47	4
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	31	34	32	11
		Copper, Cu	mg/kg	0.5	61	61	31	0
		Nickel, Ni	mg/kg	0.5	16	19	33	15
		Lead, Pb	mg/kg	1	6	6	46	3
		Zinc, Zn	mg/kg	2	54	56	34	3

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

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

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB263467.002	Exchangeable Sodium, Na	meq/100g	0.01	0.20	0.194	80 - 120	103
	Exchangeable Potassium, K	meq/100g	0.01	0.61	0.63	80 - 120	97
	Exchangeable Calcium, Ca	meq/100g	0.01	5.4	6.3	80 - 120	86
	Exchangeable Magnesium, Mg	meq/100g	0.02	1.0	1.11	80 - 120	94

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB262478.003	pH	pH Units	0.1	7.5	7.415	98 - 102	101

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

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB262946.002	Arsenic, As	mg/kg	1	320	318.22	80 - 120	100
	Cadmium, Cd	mg/kg	0.3	4.0	4.81	70 - 130	83
	Chromium, Cr	mg/kg	0.5	38	38.31	80 - 120	99
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	105
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	98
	Lead, Pb	mg/kg	1	90	89.9	80 - 120	101
	Zinc, Zn	mg/kg	2	270	273	80 - 120	99
LB262947.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	109
	Cadmium, Cd	mg/kg	0.3	4.4	4.81	70 - 130	91
	Chromium, Cr	mg/kg	0.5	43	38.31	80 - 120	111
	Copper, Cu	mg/kg	0.5	330	290	80 - 120	113
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	103
	Lead, Pb	mg/kg	1	94	89.9	80 - 120	105
	Zinc, Zn	mg/kg	2	290	273	80 - 120	105
LB262948.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	105
	Cadmium, Cd	mg/kg	0.3	4.4	4.81	70 - 130	90
	Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	106
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	110
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	102
	Lead, Pb	mg/kg	1	93	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	280	273	80 - 120	103
LB262949.002	Arsenic, As	mg/kg	1	340	318.22	80 - 120	106
	Cadmium, Cd	mg/kg	0.3	4.4	4.81	70 - 130	92
	Chromium, Cr	mg/kg	0.5	42	38.31	80 - 120	110
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	110
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	101
	Lead, Pb	mg/kg	1	93	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	280	273	80 - 120	103
LB262950.002	Arsenic, As	mg/kg	1	340	318.22	80 - 120	107
	Cadmium, Cd	mg/kg	0.3	4.3	4.81	70 - 130	90
	Chromium, Cr	mg/kg	0.5	40	38.31	80 - 120	106
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	110
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	101
	Lead, Pb	mg/kg	1	93	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	280	273	80 - 120	103
LB262951.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	103
	Cadmium, Cd	mg/kg	0.3	4.2	4.81	70 - 130	87
	Chromium, Cr	mg/kg	0.5	39	38.31	80 - 120	103
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	109
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	101
	Lead, Pb	mg/kg	1	93	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	280	273	80 - 120	103

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

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

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE238483.098	LB262946.004	Arsenic, As	mg/kg	1	48	4	50	88
		Cadmium, Cd	mg/kg	0.3	41	<0.3	50	83
		Chromium, Cr	mg/kg	0.5	52	8.9	50	85
		Copper, Cu	mg/kg	0.5	53	9.7	50	87
		Nickel, Ni	mg/kg	0.5	46	2.9	50	87
		Lead, Pb	mg/kg	1	47	4	50	84
		Zinc, Zn	mg/kg	2	62	20	50	83
SE238485.009	LB262947.004	Arsenic, As	mg/kg	1	51	14	50	75
		Cadmium, Cd	mg/kg	0.3	41	<0.3	50	81
		Chromium, Cr	mg/kg	0.5	61	24	50	73
		Copper, Cu	mg/kg	0.5	96	67	50	58 ④
		Nickel, Ni	mg/kg	0.5	50	10	50	78
		Lead, Pb	mg/kg	1	45	6	50	79
		Zinc, Zn	mg/kg	2	86	55	50	62 ④
SE238485.028	LB262948.004	Arsenic, As	mg/kg	1	50	11	50	77
		Cadmium, Cd	mg/kg	0.3	41	<0.3	50	81
		Chromium, Cr	mg/kg	0.5	65	31	50	70 ④
		Copper, Cu	mg/kg	0.5	100	60	50	81
		Nickel, Ni	mg/kg	0.5	53	15	50	76
		Lead, Pb	mg/kg	1	44	4	50	79
		Zinc, Zn	mg/kg	2	87	57	50	59 ④
SE238485.047	LB262949.004	Arsenic, As	mg/kg	1	48	6	50	84
		Cadmium, Cd	mg/kg	0.3	42	<0.3	50	83
		Chromium, Cr	mg/kg	0.5	71	33	50	76
		Copper, Cu	mg/kg	0.5	76	38	50	75
		Nickel, Ni	mg/kg	0.5	51	11	50	81
		Lead, Pb	mg/kg	1	51	11	50	80
		Zinc, Zn	mg/kg	2	71	35	50	72
SE238485.085	LB262951.004	Arsenic, As	mg/kg	1	48	7	50	82
		Cadmium, Cd	mg/kg	0.3	42	<0.3	50	84
		Chromium, Cr	mg/kg	0.5	67	35	50	65 ④
		Copper, Cu	mg/kg	0.5	94	64	50	59 ④
		Nickel, Ni	mg/kg	0.5	54	15	50	78
		Lead, Pb	mg/kg	1	45	5	50	80
		Zinc, Zn	mg/kg	2	84	55	50	58 ④

MATRIX SPIKE DUPLICATES

SE238485 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

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

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

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

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

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.

Chain of Custody Form – Ref 13592-3

Ref:	**13592-3**
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800
Telephone:	(02) 6361 4954
Facsimile:	(02) 6360 3960
Email:	felipe@envirowest.net.au
Contact Person:	Felipe Canavez
Invoice:	accounts@envirowest.net.au
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015
Quotation #:	Envir_70119_2019
Courier/CN:	Grants Express

			Sample matrix			**Sample preservation**			**Analysis**				
									SGS Method Code				
									CL1T	**pH**	**CEC**	**Clay content**	
	Sample ID	**Container***	**Sampling Date/Time**	Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)	pH	Cation exchange capacity	Clay content	
1	GC201	A	28/10/2022		X		X		X	X				
2	GC202	A	28/10/2022		X		X		X	X				
3	GC203	A	28/10/2022		X		X		X	X				
4	GC204	A	28/10/2022		X		X		X	X				
5	GC205	A	28/10/2022		X		X		X	X				
6	GC206	A	28/10/2022		X		X		X	X				
7	GC207	A	28/10/2022		X		X		X	X				
8	GC208	A	28/10/2022		X		X		X	X				
9	GC209	A	28/10/2022		X		X		X	X				
10	GC210	A	28/10/2022		X		X		X	X				
11	GC211	A	28/10/2022		X		X		X	X				
12	GC212	A	28/10/2022		X		X		X	X				
13	GC213	A	28/10/2022		X		X		X	X				
14	GC214	A	28/10/2022		X		X		X	X				
15	GC215	A	28/10/2022		X		X		X	X				
16	GC216	A	28/10/2022		X		X		X	X				
17	GC217	A	28/10/2022		X		X		X	X				
18	GC218	A	28/10/2022		X		X		X	X	X	X	X	
19	GC219	A	28/10/2022		X		X		X	X				

SGS EHS Sydney COC

SE238485

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler name: Felipe Canavez
Date: 31/10/2022 Time: 1400

Relinquished by: (print and signature) Virginia Bragg Date 31/10/2022 Time 1400

Received by: (print and signature) B. Subaray Date 01/11/22 Time @ 7.10

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

Chain of Custody Form – Ref 13592-3

Ref:	**13592-3**		**Sample matrix**			**Sample preservation**			**Analysis**				
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**				
Telephone:	(02) 6361 4954								**CL1T**	**pH**	**CEC**	**Clay content**	
Facsimile:	(02) 6360 3960												
Email:	felipe@envirowest.net.au												
Contact Person:	Felipe Canavez												
Invoice:	accounts@envirowest.net.au												
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)	pH	Cation exchange capacity	Clay content	
Quotation #:	Envir_70119_2019												
Courier/CN:	Grants Express												
	Sample ID	**Container***	**Sampling Date/Time**										
20	GC220	A	28/10/2022		X		X		X	X			
21	GC221	A	28/10/2022		X		X		X	X			
22	GC222	A	28/10/2022		X		X		X	X			
23	GC223	A	28/10/2022		X		X		X	X			
24	GC224	A	28/10/2022		X		X		X	X			
25	GC225	A	28/10/2022		X		X		X	X			
26	GC226	A	28/10/2022		X		X		X	X			
27	GC227	A	28/10/2022		X		X		X	X			
28	GC228	A	28/10/2022		X		X		X	X			
	GC229	A	28/10/2022		X		X		X	X			
29	GC230	A	28/10/2022		X		X		X	X			
30	GC231	A	28/10/2022		X		X		X	X			
31	GC232	A	28/10/2022		X		X		X	X			
32	GC233	A	28/10/2022		X		X		X	X			
33	GC234	A	28/10/2022		X		X		X	X			
34	GC235	A	28/10/2022		X		X		X	X			
35	GC236	A	28/10/2022		X		X		X	X			
36	GC237	A	28/10/2022		X		X		X	X			
37	GC238	A	28/10/2022		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: 31/10/2022 Time: 1400

Relinquished by: (print and signature)	Virginia Bragg	Date	Time	Received by: (print and signature)	Date	Time
		31/10/2022	1400		01/11/22	@ 7.10

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

Chain of Custody Form – Ref 13592-3

Ref:	**13592-3**		**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**					
Telephone:	(02) 6361 4954								**CL1T**	**pH**	**CEC**	**Clay content**		
Facsimile:	(02) 6360 3960													
Email:	felipe@envirowest.net.au													
Contact Person:	Felipe Canavez													
Invoice:	accounts@envirowest.net.au													
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)	pH	Cation exchange capacity	Clay content		
Quotation #:	Envir_70119_2019													
Courier/CN:	Grants Express													
Sample ID	**Container***	**Sampling Date/Time**												
38 GC239	A	28/10/2022		X		X		X	X					
39 GC240	A	28/10/2022		X		X		X	X					
40 GC241	A	28/10/2022		X		X		X	X					
41 GC242	A	28/10/2022		X		X		X	X					
42 GC243	A	28/10/2022		X		X		X	X					
43 GC244	A	28/10/2022		X		X		X	X					
44 GC245	A	28/10/2022		X		X		X	X					
45 GC246	A	28/10/2022		X		X		X	X					
46 GC247	A	28/10/2022		X		X		X	X					
47 GC248	A	28/10/2022		X		X		X	X					
48 GC249	A	28/10/2022		X		X		X	X					
49 GC250	A	28/10/2022		X		X		X	X					
50 GC251	A	28/10/2022		X		X		X	X					
51 GC252	A	28/10/2022		X		X		X	X					
52 GC253	A	28/10/2022		X		X		X	X					
53 GC254	A	28/10/2022		X		X		X	X					
54 GC255	A	28/10/2022		X		X		X	X					
55 GC256	A	28/10/2022		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: 31/10/2022 Time: 1400

Relinquished by: (print and signature) Virginia Bragg Date 31/10/2022 Time 1400

Received by: (print and signature) Date Time 01/11/22 @ 7:10

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

Chain of Custody Form – Ref 13592-3

Ref:	**13592-3**	**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800							**SGS Method Code**					
Telephone:	(02) 6361 4954							**CL1T**	**pH**	**CEC**	**Clay content**		
Facsimile:	(02) 6360 3960												
Email:	felipe@envirowest.net.au												
Contact Person:	Felipe Canavez												
Invoice:	accounts@envirowest.net.au												
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015	Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)	pH	Cation exchange capacity	Clay content		
Quotation #:	Envir_70119_2019												
Courier/CN:	Grants Express												
Sample ID	**Container***	**Sampling Date/Time**											
GC257	A	28/10/2022		X		X		X	X				
GC258	A	28/10/2022		X		X		X	X				
GC259	A	28/10/2022		X		X		X	X				
GC260	A	28/10/2022		X		X		X	X				
GC261	A	28/10/2022		X		X		X	X				
GC262	A	28/10/2022		X		X		X	X				
GC263	A	28/10/2022		X		X		X	X				
GC264	A	28/10/2022		X		X		X	X				
GC265	A	28/10/2022		X		X		X	X				
GC266	A	28/10/2022		X		X		X	X				
GC267	A	28/10/2022		X		X		X	X				
GC268	A	28/10/2022		X		X		X	X				
GC269	A	28/10/2022		X		X		X	X				
GC270	A	28/10/2022		X		X		X	X				
GC271	A	28/10/2022		X		X		X	X				
GC272	A	28/10/2022		X		X		X	X				
GC273	A	28/10/2022		X		X		X	X				
GC274	A	28/10/2022		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: 31/10/2022 Time: 1400								
Relinquished by: (print and signature)	Virginia Bragg	Date 31/10/2022	Time 1400		Received by: (print and signature)			Date	Time				

01/11/22 @ 7.10

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

Chain of Custody Form – Ref 13592-3

Ref:	**13592-3**		**Sample matrix**			**Sample preservation**			**Analysis**						
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**						
Telephone:	(02) 6361 4954								**CL1T**	**pH**	**CEC**	**Clay content**			
Facsimile:	(02) 6360 3960														
Email:	felipe@envirowest.net.au														
Contact Person:	Felipe Canavez														
Invoice:	accounts@envirowest.net.au														
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)	pH	Cation exchange capacity	Clay content			
Quotation #:	Envir_70119_2019														
Courier/CN:	Grants Express														
	Sample ID	**Container***	**Sampling Date/Time**												
74	GC275	A	28/10/2022		X		X		X	X					
75	GC276	A	28/10/2022		X		X		X	X					
76	GC277	A	28/10/2022		X		X		X	X					
77	GC278	A	28/10/2022		X		X		X	X					
78	GC279	A	28/10/2022		X		X		X	X					
79	GC280	A	28/10/2022		X		X		X	X					
80	GC281	A	28/10/2022		X		X		X	X					
81	GC282	A	28/10/2022		X		X		X	X					
82	GC283	A	28/10/2022		X		X		X	X					
83	GC284	A	28/10/2022		X		X		X	X					
84	GC285	A	28/10/2022		X		X		X	X					
85	GC286	A	28/10/2022		X		X		X	X					
86	GC287	A	28/10/2022		X		X		X	X					
87	GC288	A	28/10/2022		X		X		X	X					
88	GC289	A	28/10/2022		X		X		X	X					
89	GC290	A	28/10/2022		X		X		X	X					
90	GC291	A	28/10/2022		X		X		X	X					
91	GC292	A	28/10/2022		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: 31/10/2022 Time: 1400

Relinquished by: (print and signature)	Virginia Bragg	Date 31/10/2022	Time 1400
Received by: (print and signature)	B. Subaray	Date 01/11/22	Time @ 7.10

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

Chain of Custody Form – Ref 13592-3

Ref:	**13592-3**		**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**					
Telephone:	(02) 6361 4954								**CL1T**	**pH**	**CEC**	**Clay content**		
Facsimile:	(02) 6360 3960													
Email:	felipe@envirowest.net.au													
Contact Person:	Felipe Canavez													
Invoice:	accounts@envirowest.net.au													
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 metals (total)	pH	Cation exchange capacity	Clay content		
Quotation #:	Envir_70119_2019													
Courier/CN:	Grants Express													
	Sample ID	**Container***	**Sampling Date/Time**											
92	GC293	A	28/10/2022		X		X		X	X				
93	GC294	A	28/10/2022		X		X		X	X				
94	GC295	A	28/10/2022		X		X		X	X				
95	GC296	A	28/10/2022		X		X		X	X				
96	DA11	A	28/10/2022		X		X		X	X				
97	DA12	A	28/10/2022		X		X		X	X				
98	DA13	A	28/10/2022		X		X		X	X				
99	DA14	A	28/10/2022		X		X		X	X				
100	DA15	A	28/10/2022		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: 31/10/2022 Time: 1400

Relinquished by: (print and signature) Virginia Bragg Date 31/10/2022 Time 1400

Received by: (print and signature) Date Time 01/11/22 @ 7.10

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

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	61 2 63614954
Facsimile	(Not specified)
Email	felipe@envirowest.net.au
Project	**13592-4**
Order Number	**13592-4**
Samples	32

LABORATORY DETAILS

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Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
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Email	au.environmental.sydney@sgs.com
SGS Reference	**SE238486 R0**
Date Received	1/11/2022
Date Reported	11/11/2022

COMMENTS

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

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Dong LIANG
Metals/Inorganics Team Leader

Kamrul AHSAN
Senior Chemist

Ly Kim HA
Organic Section Head

Shane MCDERMOTT
Inorganic/Metals Chemist

Teresa NGUYEN
Organic Chemist

VOC's in Soil [AN433] Tested: 3/11/2022

PARAMETER	UOM	LOR	HS1 SOIL - 27/10/2022 SE238486.021	HS2 SOIL - 27/10/2022 SE238486.022	HS3 SOIL - 27/10/2022 SE238486.023	HS4 SOIL - 27/10/2022 SE238486.024	HS5 SOIL - 27/10/2022 SE238486.025
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	HS6 SOIL - 27/10/2022 SE238486.026	HS7 SOIL - 27/10/2022 SE238486.027	HS8 SOIL - 27/10/2022 SE238486.028	HS9 SOIL - 27/10/2022 SE238486.029	HS10 SOIL - 28/10/2022 SE238486.030
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
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

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 3/11/2022

PARAMETER	UOM	LOR	HS1 SOIL - 27/10/2022 SE238486.021	HS2 SOIL - 27/10/2022 SE238486.022	HS3 SOIL - 27/10/2022 SE238486.023	HS4 SOIL - 27/10/2022 SE238486.024	HS5 SOIL - 27/10/2022 SE238486.025
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	HS6 SOIL - 27/10/2022 SE238486.026	HS7 SOIL - 27/10/2022 SE238486.027	HS8 SOIL - 27/10/2022 SE238486.028	HS9 SOIL - 27/10/2022 SE238486.029	HS10 SOIL - 28/10/2022 SE238486.030
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 3/11/2022

PARAMETER	UOM	LOR	HS1 SOIL - 27/10/2022 SE238486.021	HS2 SOIL - 27/10/2022 SE238486.022	HS3 SOIL - 27/10/2022 SE238486.023	HS4 SOIL - 27/10/2022 SE238486.024	HS5 SOIL - 27/10/2022 SE238486.025
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	**100**
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	**110**
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	**190**
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	**210**
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	HS6 SOIL - 27/10/2022 SE238486.026	HS7 SOIL - 27/10/2022 SE238486.027	HS8 SOIL - 27/10/2022 SE238486.028	HS9 SOIL - 27/10/2022 SE238486.029	HS10 SOIL - 28/10/2022 SE238486.030
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	**200**
TRH C15-C28	mg/kg	45	<45	**49**	<45	**140**	**1300**
TRH C29-C36	mg/kg	45	<45	**65**	<45	**190**	**1500**
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	**210**
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	**240**
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	**240**
TRH >C16-C34 (F3)	mg/kg	90	<90	**110**	<90	**300**	**2400**
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	**620**
TRH C10-C36 Total	mg/kg	110	<110	**110**	<110	**330**	**3000**
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	**300**	**3200**

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 3/11/2022

PARAMETER	UOM	LOR	HS1 SOIL - 27/10/2022 SE238486.021	HS2 SOIL - 27/10/2022 SE238486.022	HS3 SOIL - 27/10/2022 SE238486.023	HS4 SOIL - 27/10/2022 SE238486.024	HS5 SOIL - 27/10/2022 SE238486.025
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	HS6 SOIL - 27/10/2022 SE238486.026	HS7 SOIL - 27/10/2022 SE238486.027	HS8 SOIL - 27/10/2022 SE238486.028	HS9 SOIL - 27/10/2022 SE238486.029	HS10 SOIL - 28/10/2022 SE238486.030
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<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	**0.4**
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 3/11/2022

PARAMETER	UOM	LOR	SL1 SOIL - 28/10/2022 SE238486.018	SL2 SOIL - 28/10/2022 SE238486.019	SL3 SOIL - 28/10/2022 SE238486.020
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 7/11/2022

PARAMETER	UOM	LOR	GC297 SOIL - 28/10/2022 SE238486.001	GC298 SOIL - 28/10/2022 SE238486.002	GC299 SOIL - 28/10/2022 SE238486.003	GC300 SOIL - 28/10/2022 SE238486.004	GC301 SOIL - 28/10/2022 SE238486.005
Arsenic, As	mg/kg	1	8	5	6	5	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	30	26	31	33	22
Copper, Cu	mg/kg	0.5	65	43	61	38	41
Lead, Pb	mg/kg	1	5	7	6	7	9
Nickel, Ni	mg/kg	0.5	15	12	16	13	11
Zinc, Zn	mg/kg	2	62	48	54	56	51

PARAMETER	UOM	LOR	GC302 SOIL - 28/10/2022 SE238486.006	GC303 SOIL - 28/10/2022 SE238486.007	GC304 SOIL - 28/10/2022 SE238486.008	GC305 SOIL - 28/10/2022 SE238486.009	GC306 SOIL - 28/10/2022 SE238486.010
Arsenic, As	mg/kg	1	4	5	6	6	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	29	32	33	28	25
Copper, Cu	mg/kg	0.5	32	41	44	46	41
Lead, Pb	mg/kg	1	6	5	6	29	41
Nickel, Ni	mg/kg	0.5	13	15	21	15	13
Zinc, Zn	mg/kg	2	55	56	56	68	76

PARAMETER	UOM	LOR	GC307 SOIL - 28/10/2022 SE238486.011	GC308 SOIL - 28/10/2022 SE238486.012	GC309 SOIL - 28/10/2022 SE238486.013	GC310 SOIL - 28/10/2022 SE238486.014	GC311 SOIL - 28/10/2022 SE238486.015
Arsenic, As	mg/kg	1	4	5	4	6	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	30	41	11	21	20
Copper, Cu	mg/kg	0.5	37	53	45	39	41
Lead, Pb	mg/kg	1	4	4	5	3	5
Nickel, Ni	mg/kg	0.5	13	18	8.5	13	11
Zinc, Zn	mg/kg	2	70	61	60	60	56

PARAMETER	UOM	LOR	GC312 SOIL - 27/10/2022 SE238486.016	GC313 SOIL - 27/10/2022 SE238486.017	SL1 SOIL - 28/10/2022 SE238486.018	SL2 SOIL - 28/10/2022 SE238486.019	SL3 SOIL - 28/10/2022 SE238486.020
Arsenic, As	mg/kg	1	5	6	3	9	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	34	62	4.2	25	18
Copper, Cu	mg/kg	0.5	50	63	7.0	50	34
Lead, Pb	mg/kg	1	6	10	4	7	4
Nickel, Ni	mg/kg	0.5	14	28	2.1	9.7	10
Zinc, Zn	mg/kg	2	46	56	15	58	37

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 7/11/2022

(continued)

PARAMETER	UOM	LOR	HS1 SOIL - 27/10/2022 SE238486.021	HS2 SOIL - 27/10/2022 SE238486.022	HS3 SOIL - 27/10/2022 SE238486.023	HS4 SOIL - 27/10/2022 SE238486.024	HS5 SOIL - 27/10/2022 SE238486.025
Arsenic, As	mg/kg	1	12	3	2	8	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	0.9	<0.3
Chromium, Cr	mg/kg	0.5	2.9	4.2	3.1	4.6	3.1
Copper, Cu	mg/kg	0.5	11	7.8	7.4	11	8.9
Lead, Pb	mg/kg	1	8	78	5	34	10
Nickel, Ni	mg/kg	0.5	1.5	1.5	1.7	2.9	1.8
Zinc, Zn	mg/kg	2	91	660	59	1600	490

PARAMETER	UOM	LOR	HS6 SOIL - 27/10/2022 SE238486.026	HS7 SOIL - 27/10/2022 SE238486.027	HS8 SOIL - 27/10/2022 SE238486.028	HS9 SOIL - 27/10/2022 SE238486.029	HS10 SOIL - 28/10/2022 SE238486.030
Arsenic, As	mg/kg	1	5	8	6	6	7
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	2.4	22	21	29	13
Copper, Cu	mg/kg	0.5	5.0	57	56	76	47
Lead, Pb	mg/kg	1	3	6	6	4	5
Nickel, Ni	mg/kg	0.5	1.5	11	12	16	7.5
Zinc, Zn	mg/kg	2	14	63	48	63	59

PARAMETER	UOM	LOR	DA16 SOIL - 28/10/2022 SE238486.031	DA17 SOIL - 28/10/2022 SE238486.032
Arsenic, As	mg/kg	1	5	10
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	25	22
Copper, Cu	mg/kg	0.5	42	61
Lead, Pb	mg/kg	1	8	7
Nickel, Ni	mg/kg	0.5	12	10
Zinc, Zn	mg/kg	2	54	48

Mercury in Soil [AN312] Tested: 7/11/2022

PARAMETER	UOM	LOR	HS1 SOIL - 27/10/2022 SE238486.021	HS2 SOIL - 27/10/2022 SE238486.022	HS3 SOIL - 27/10/2022 SE238486.023	HS4 SOIL - 27/10/2022 SE238486.024	HS5 SOIL - 27/10/2022 SE238486.025
Mercury	mg/kg	0.05	**0.09**	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	HS6 SOIL - 27/10/2022 SE238486.026	HS7 SOIL - 27/10/2022 SE238486.027	HS8 SOIL - 27/10/2022 SE238486.028	HS9 SOIL - 27/10/2022 SE238486.029	HS10 SOIL - 28/10/2022 SE238486.030
Mercury	mg/kg	0.05	<0.05	**0.09**	**0.15**	<0.05	**0.10**

Moisture Content [AN002] Tested: 3/11/2022

PARAMETER	UOM	LOR	GC297 SOIL - 28/10/2022 SE238486.001	GC298 SOIL - 28/10/2022 SE238486.002	GC299 SOIL - 28/10/2022 SE238486.003	GC300 SOIL - 28/10/2022 SE238486.004	GC301 SOIL - 28/10/2022 SE238486.005
% Moisture	%w/w	1	32.1	26.9	30.1	33.8	30.8

PARAMETER	UOM	LOR	GC302 SOIL - 28/10/2022 SE238486.006	GC303 SOIL - 28/10/2022 SE238486.007	GC304 SOIL - 28/10/2022 SE238486.008	GC305 SOIL - 28/10/2022 SE238486.009	GC306 SOIL - 28/10/2022 SE238486.010
% Moisture	%w/w	1	24.8	28.1	30.0	26.6	29.5

PARAMETER	UOM	LOR	GC307 SOIL - 28/10/2022 SE238486.011	GC308 SOIL - 28/10/2022 SE238486.012	GC309 SOIL - 28/10/2022 SE238486.013	GC310 SOIL - 28/10/2022 SE238486.014	GC311 SOIL - 28/10/2022 SE238486.015
% Moisture	%w/w	1	37.5	25.6	27.6	31.7	29.6

PARAMETER	UOM	LOR	GC312 SOIL - 27/10/2022 SE238486.016	GC313 SOIL - 27/10/2022 SE238486.017	SL1 SOIL - 28/10/2022 SE238486.018	SL2 SOIL - 28/10/2022 SE238486.019	SL3 SOIL - 28/10/2022 SE238486.020
% Moisture	%w/w	1	34.9	37.4	22.3	38.2	38.4

PARAMETER	UOM	LOR	HS1 SOIL - 27/10/2022 SE238486.021	HS2 SOIL - 27/10/2022 SE238486.022	HS3 SOIL - 27/10/2022 SE238486.023	HS4 SOIL - 27/10/2022 SE238486.024	HS5 SOIL - 27/10/2022 SE238486.025
% Moisture	%w/w	1	28.0	22.2	22.9	25.0	36.7

PARAMETER	UOM	LOR	HS6 SOIL - 27/10/2022 SE238486.026	HS7 SOIL - 27/10/2022 SE238486.027	HS8 SOIL - 27/10/2022 SE238486.028	HS9 SOIL - 27/10/2022 SE238486.029	HS10 SOIL - 28/10/2022 SE238486.030
% Moisture	%w/w	1	16.8	21.3	18.4	19.9	50.1

PARAMETER	UOM	LOR	DA16 SOIL - 28/10/2022 SE238486.031	DA17 SOIL - 28/10/2022 SE238486.032
% Moisture	%w/w	1	30.1	25.5

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid , mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser . Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). 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.

FOOTNOTES

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

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

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

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

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

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

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

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

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

STATEMENT OF QA/QC PERFORMANCE

SE238486 R0

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	61 2 63614954
Facsimile	(Not specified)
Email	felipe@envirowest.net.au
Project	**13592-4**
Order Number	**13592-4**
Samples	32

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE238486 R0**
Date Received	01 Nov 2022
Date Reported	11 Nov 2022

COMMENTS

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

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

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

Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	4 items
Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	3 items
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
	TRH (Total Recoverable Hydrocarbons) in Soil	2 items

SAMPLE SUMMARY

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	32 Soil
Date documentation received	1/11/2022	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	14.5°C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

HOLDING TIME SUMMARY

SE238486 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS1	SE238486.021	LB262968	27 Oct 2022	01 Nov 2022	24 Nov 2022	07 Nov 2022	24 Nov 2022	09 Nov 2022
HS2	SE238486.022	LB262968	27 Oct 2022	01 Nov 2022	24 Nov 2022	07 Nov 2022	24 Nov 2022	09 Nov 2022
HS3	SE238486.023	LB262968	27 Oct 2022	01 Nov 2022	24 Nov 2022	07 Nov 2022	24 Nov 2022	09 Nov 2022
HS4	SE238486.024	LB262968	27 Oct 2022	01 Nov 2022	24 Nov 2022	07 Nov 2022	24 Nov 2022	09 Nov 2022
HS5	SE238486.025	LB262968	27 Oct 2022	01 Nov 2022	24 Nov 2022	07 Nov 2022	24 Nov 2022	09 Nov 2022
HS6	SE238486.026	LB262968	27 Oct 2022	01 Nov 2022	24 Nov 2022	07 Nov 2022	24 Nov 2022	09 Nov 2022
HS7	SE238486.027	LB262968	27 Oct 2022	01 Nov 2022	24 Nov 2022	07 Nov 2022	24 Nov 2022	09 Nov 2022
HS8	SE238486.028	LB262968	27 Oct 2022	01 Nov 2022	24 Nov 2022	07 Nov 2022	24 Nov 2022	09 Nov 2022
HS9	SE238486.029	LB262968	27 Oct 2022	01 Nov 2022	24 Nov 2022	07 Nov 2022	24 Nov 2022	09 Nov 2022
HS10	SE238486.030	LB262968	28 Oct 2022	01 Nov 2022	25 Nov 2022	07 Nov 2022	25 Nov 2022	09 Nov 2022

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC297	SE238486.001	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC298	SE238486.002	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC299	SE238486.003	LB262965	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC300	SE238486.004	LB262966	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC301	SE238486.005	LB262966	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC302	SE238486.006	LB262966	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC303	SE238486.007	LB262966	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC304	SE238486.008	LB262966	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC305	SE238486.009	LB262966	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC306	SE238486.010	LB262966	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC307	SE238486.011	LB262966	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC308	SE238486.012	LB262966	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC309	SE238486.013	LB262966	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC310	SE238486.014	LB262966	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC311	SE238486.015	LB262966	28 Oct 2022	01 Nov 2022	11 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC312	SE238486.016	LB262966	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
GC313	SE238486.017	LB262966	27 Oct 2022	01 Nov 2022	10 Nov 2022	07 Nov 2022	12 Nov 2022	11 Nov 2022
SL1	SE238486.018	LB262661	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022
SL2	SE238486.019	LB262661	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022
SL3	SE238486.020	LB262661	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022
HS1	SE238486.021	LB262661	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022
HS2	SE238486.022	LB262661	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022
HS3	SE238486.023	LB262661	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022
HS4	SE238486.024	LB262661	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022
HS5	SE238486.025	LB262661	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022
HS6	SE238486.026	LB262661	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022
HS7	SE238486.027	LB262661	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022
HS8	SE238486.028	LB262661	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022
HS9	SE238486.029	LB262661	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022
HS10	SE238486.030	LB262661	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022
DA16	SE238486.031	LB262661	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022
DA17	SE238486.032	LB262661	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	08 Nov 2022	07 Nov 2022

OC Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SL1	SE238486.018	LB262644	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	13 Dec 2022	07 Nov 2022
SL2	SE238486.019	LB262644	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	13 Dec 2022	07 Nov 2022
SL3	SE238486.020	LB262644	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	13 Dec 2022	07 Nov 2022
HS1	SE238486.021	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS2	SE238486.022	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS3	SE238486.023	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS4	SE238486.024	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS5	SE238486.025	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS6	SE238486.026	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS7	SE238486.027	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS8	SE238486.028	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS9	SE238486.029	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS10	SE238486.030	LB262644	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022

HOLDING TIME SUMMARY

SE238486 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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SL1	SE238486.018	LB262644	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
SL2	SE238486.019	LB262644	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
SL3	SE238486.020	LB262644	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS1	SE238486.021	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS2	SE238486.022	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS3	SE238486.023	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS4	SE238486.024	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS5	SE238486.025	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS6	SE238486.026	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS7	SE238486.027	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS8	SE238486.028	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS9	SE238486.029	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS10	SE238486.030	LB262644	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC297	SE238486.001	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC298	SE238486.002	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC299	SE238486.003	LB262951	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC300	SE238486.004	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC301	SE238486.005	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC302	SE238486.006	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC303	SE238486.007	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC304	SE238486.008	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC305	SE238486.009	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC306	SE238486.010	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC307	SE238486.011	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC308	SE238486.012	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC309	SE238486.013	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC310	SE238486.014	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC311	SE238486.015	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
GC312	SE238486.016	LB262952	27 Oct 2022	01 Nov 2022	25 Apr 2023	07 Nov 2022	25 Apr 2023	11 Nov 2022
GC313	SE238486.017	LB262952	27 Oct 2022	01 Nov 2022	25 Apr 2023	07 Nov 2022	25 Apr 2023	11 Nov 2022
SL1	SE238486.018	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
SL2	SE238486.019	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
SL3	SE238486.020	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
HS1	SE238486.021	LB262969	27 Oct 2022	01 Nov 2022	25 Apr 2023	07 Nov 2022	25 Apr 2023	08 Nov 2022
HS2	SE238486.022	LB262969	27 Oct 2022	01 Nov 2022	25 Apr 2023	07 Nov 2022	25 Apr 2023	08 Nov 2022
HS3	SE238486.023	LB262969	27 Oct 2022	01 Nov 2022	25 Apr 2023	07 Nov 2022	25 Apr 2023	08 Nov 2022
HS4	SE238486.024	LB262969	27 Oct 2022	01 Nov 2022	25 Apr 2023	07 Nov 2022	25 Apr 2023	08 Nov 2022
HS5	SE238486.025	LB262969	27 Oct 2022	01 Nov 2022	25 Apr 2023	07 Nov 2022	25 Apr 2023	08 Nov 2022
HS6	SE238486.026	LB262969	27 Oct 2022	01 Nov 2022	25 Apr 2023	07 Nov 2022	25 Apr 2023	08 Nov 2022
HS7	SE238486.027	LB262969	27 Oct 2022	01 Nov 2022	25 Apr 2023	07 Nov 2022	25 Apr 2023	08 Nov 2022
HS8	SE238486.028	LB262969	27 Oct 2022	01 Nov 2022	25 Apr 2023	07 Nov 2022	25 Apr 2023	08 Nov 2022
HS9	SE238486.029	LB262969	27 Oct 2022	01 Nov 2022	25 Apr 2023	07 Nov 2022	25 Apr 2023	08 Nov 2022
HS10	SE238486.030	LB262969	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	08 Nov 2022
DA16	SE238486.031	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022
DA17	SE238486.032	LB262952	28 Oct 2022	01 Nov 2022	26 Apr 2023	07 Nov 2022	26 Apr 2023	11 Nov 2022

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SL1	SE238486.018	LB262644	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
SL2	SE238486.019	LB262644	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
SL3	SE238486.020	LB262644	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS1	SE238486.021	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS2	SE238486.022	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS3	SE238486.023	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS4	SE238486.024	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS5	SE238486.025	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS6	SE238486.026	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS7	SE238486.027	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022

HOLDING TIME SUMMARY

SE238486 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)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS8	SE238486.028	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS9	SE238486.029	LB262644	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022
HS10	SE238486.030	LB262644	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	13 Dec 2022	08 Nov 2022

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS1	SE238486.021	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS2	SE238486.022	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS3	SE238486.023	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS4	SE238486.024	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS5	SE238486.025	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS6	SE238486.026	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS7	SE238486.027	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS8	SE238486.028	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS9	SE238486.029	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS10	SE238486.030	LB262656	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	11 Nov 2022	07 Nov 2022

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS1	SE238486.021	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS2	SE238486.022	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS3	SE238486.023	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS4	SE238486.024	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS5	SE238486.025	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS6	SE238486.026	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS7	SE238486.027	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS8	SE238486.028	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS9	SE238486.029	LB262656	27 Oct 2022	01 Nov 2022	10 Nov 2022	03 Nov 2022	10 Nov 2022	07 Nov 2022
HS10	SE238486.030	LB262656	28 Oct 2022	01 Nov 2022	11 Nov 2022	03 Nov 2022	11 Nov 2022	07 Nov 2022

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

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

OC Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	SL1	SE238486.018	%	60 - 130%	96
	SL2	SE238486.019	%	60 - 130%	96
	SL3	SE238486.020	%	60 - 130%	94

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	HS1	SE238486.021	%	70 - 130%	92
	HS2	SE238486.022	%	70 - 130%	94
	HS3	SE238486.023	%	70 - 130%	87
	HS4	SE238486.024	%	70 - 130%	96
	HS5	SE238486.025	%	70 - 130%	94
	HS6	SE238486.026	%	70 - 130%	94
	HS7	SE238486.027	%	70 - 130%	95
	HS8	SE238486.028	%	70 - 130%	94
	HS9	SE238486.029	%	70 - 130%	70
	HS10	SE238486.030	%	70 - 130%	104
d14-p-terphenyl (Surrogate)	HS1	SE238486.021	%	70 - 130%	100
	HS2	SE238486.022	%	70 - 130%	101
	HS3	SE238486.023	%	70 - 130%	94
	HS4	SE238486.024	%	70 - 130%	104
	HS5	SE238486.025	%	70 - 130%	102
	HS6	SE238486.026	%	70 - 130%	101
	HS7	SE238486.027	%	70 - 130%	101
	HS8	SE238486.028	%	70 - 130%	100
	HS9	SE238486.029	%	70 - 130%	78
	HS10	SE238486.030	%	70 - 130%	111
d5-nitrobenzene (Surrogate)	HS1	SE238486.021	%	70 - 130%	104
	HS2	SE238486.022	%	70 - 130%	110
	HS3	SE238486.023	%	70 - 130%	100
	HS4	SE238486.024	%	70 - 130%	113
	HS5	SE238486.025	%	70 - 130%	109
	HS6	SE238486.026	%	70 - 130%	111
	HS7	SE238486.027	%	70 - 130%	108
	HS8	SE238486.028	%	70 - 130%	109
	HS9	SE238486.029	%	70 - 130%	71
	HS10	SE238486.030	%	70 - 130%	124

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	HS1	SE238486.021	%	60 - 130%	83
	HS2	SE238486.022	%	60 - 130%	78
	HS3	SE238486.023	%	60 - 130%	87
	HS4	SE238486.024	%	60 - 130%	86
	HS5	SE238486.025	%	60 - 130%	79
	HS6	SE238486.026	%	60 - 130%	79
	HS7	SE238486.027	%	60 - 130%	88
	HS8	SE238486.028	%	60 - 130%	86
	HS9	SE238486.029	%	60 - 130%	85
	HS10	SE238486.030	%	60 - 130%	71
d4-1,2-dichloroethane (Surrogate)	HS1	SE238486.021	%	60 - 130%	83
	HS2	SE238486.022	%	60 - 130%	78
	HS3	SE238486.023	%	60 - 130%	85
	HS4	SE238486.024	%	60 - 130%	89
	HS5	SE238486.025	%	60 - 130%	79
	HS6	SE238486.026	%	60 - 130%	85
	HS7	SE238486.027	%	60 - 130%	90
	HS8	SE238486.028	%	60 - 130%	88
	HS9	SE238486.029	%	60 - 130%	84
	HS10	SE238486.030	%	60 - 130%	79
d8-toluene (Surrogate)	HS1	SE238486.021	%	60 - 130%	81
	HS2	SE238486.022	%	60 - 130%	88
	HS3	SE238486.023	%	60 - 130%	85

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

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

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	HS4	SE238486.024	%	60 - 130%	85
	HS5	SE238486.025	%	60 - 130%	76
	HS6	SE238486.026	%	60 - 130%	80
	HS7	SE238486.027	%	60 - 130%	89
	HS8	SE238486.028	%	60 - 130%	88
	HS9	SE238486.029	%	60 - 130%	86
	HS10	SE238486.030	%	60 - 130%	70

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	HS1	SE238486.021	%	60 - 130%	83
	HS2	SE238486.022	%	60 - 130%	78
	HS3	SE238486.023	%	60 - 130%	87
	HS4	SE238486.024	%	60 - 130%	86
	HS5	SE238486.025	%	60 - 130%	79
	HS6	SE238486.026	%	60 - 130%	79
	HS7	SE238486.027	%	60 - 130%	88
	HS8	SE238486.028	%	60 - 130%	86
	HS9	SE238486.029	%	60 - 130%	85
	HS10	SE238486.030	%	60 - 130%	71
d4-1,2-dichloroethane (Surrogate)	HS1	SE238486.021	%	60 - 130%	83
	HS2	SE238486.022	%	60 - 130%	78
	HS3	SE238486.023	%	60 - 130%	85
	HS4	SE238486.024	%	60 - 130%	89
	HS5	SE238486.025	%	60 - 130%	79
	HS6	SE238486.026	%	60 - 130%	85
	HS7	SE238486.027	%	60 - 130%	90
	HS8	SE238486.028	%	60 - 130%	88
	HS9	SE238486.029	%	60 - 130%	84
	HS10	SE238486.030	%	60 - 130%	79
d8-toluene (Surrogate)	HS1	SE238486.021	%	60 - 130%	81
	HS2	SE238486.022	%	60 - 130%	88
	HS3	SE238486.023	%	60 - 130%	85
	HS4	SE238486.024	%	60 - 130%	85
	HS5	SE238486.025	%	60 - 130%	76
	HS6	SE238486.026	%	60 - 130%	80
	HS7	SE238486.027	%	60 - 130%	89
	HS8	SE238486.028	%	60 - 130%	88
	HS9	SE238486.029	%	60 - 130%	86
	HS10	SE238486.030	%	60 - 130%	70

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

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

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB262968.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB262644.001	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
	Alpha BHC	mg/kg	0.1	<0.1
	Lindane	mg/kg	0.1	<0.1
	Heptachlor	mg/kg	0.1	<0.1
	Aldrin	mg/kg	0.1	<0.1
	Beta BHC	mg/kg	0.1	<0.1
	Delta BHC	mg/kg	0.1	<0.1
	Heptachlor epoxide	mg/kg	0.1	<0.1
	Alpha Endosulfan	mg/kg	0.2	<0.2
	Gamma Chlordane	mg/kg	0.1	<0.1
	Alpha Chlordane	mg/kg	0.1	<0.1
	p,p'-DDE	mg/kg	0.1	<0.1
	Dieldrin	mg/kg	0.2	<0.2
	Endrin	mg/kg	0.2	<0.2
	Beta Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDD	mg/kg	0.1	<0.1
	p,p'-DDT	mg/kg	0.1	<0.1
	Endosulfan sulphate	mg/kg	0.1	<0.1
	Endrin Aldehyde	mg/kg	0.1	<0.1
	Methoxychlor	mg/kg	0.1	<0.1
	Endrin Ketone	mg/kg	0.1	<0.1
	Isodrin	mg/kg	0.1	<0.1
	Mirex	mg/kg	0.1	<0.1
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	88

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB262644.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
	Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
	Benzo(ghi)perylene	mg/kg	0.1	<0.1
	Total PAH (18)	mg/kg	0.8	<0.8
Surrogates	d5-nitrobenzene (Surrogate)	%	-	118
	2-fluorobiphenyl (Surrogate)	%	-	99
	d14-p-terphenyl (Surrogate)	%	-	109

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

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

Sample Number	Parameter	Units	LOR	Result
LB262951.001	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

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

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

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

Sample Number	Parameter	Units	LOR	Result
LB262951.001	Zinc, Zn	mg/kg	2	<2
LB262952.001	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
LB262969.001	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

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

Sample Number	Parameter	Units	LOR	Result
LB262644.001	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
LB262656.001	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)	%	-	99
		d8-toluene (Surrogate)	%	-	101
		Bromofluorobenzene (Surrogate)	%	-	94
	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
LB262656.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	99

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

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

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

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

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

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238486.030	LB262968.014	Mercury	mg/kg	0.05	0.10	0.10	79	1
SE238755.001	LB262968.022	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238485.094	LB262965.011	% Moisture	%w/w	1	38.6	35.4	33	9
SE238486.003	LB262965.021	% Moisture	%w/w	1	30.1	33.2	33	10
SE238486.013	LB262966.011	% Moisture	%w/w	1	27.6	30.5	33	10
SE238486.017	LB262966.016	% Moisture	%w/w	1	37.4	31.8	33	16
SE238486.027	LB262661.011	% Moisture	%w/w	1	21.3	21.7	35	2
SE238539.005	LB262661.022	% Moisture	%w/w	1	21.5	23.6	34	9
SE238539.009	LB262661.027	% Moisture	%w/w	1	<1	<1	200	0

OC Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238539.007	LB262644.025		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	30	3

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238486.027	LB262644.014	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

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

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

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

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238486.027	LB262644.014		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	0
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE238539.007	LB262644.025		Naphthalene	mg/kg	0.1	0.7	1.2	41	56 ②
			2-methylnaphthalene	mg/kg	0.1	0.3	0.6	50	60 ②
			1-methylnaphthalene	mg/kg	0.1	0.1	0.3	79	60
			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	0.9	1.4	39	41 ②
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	0.4	0.2	60	59
			Pyrene	mg/kg	0.1	0.3	0.2	72	19
			Benzo(a)anthracene	mg/kg	0.1	0.2	0.1	97	63
			Chrysene	mg/kg	0.1	1.4	0.5	40	99 ②
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.1	0.1	104	11
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	127	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	153	0
			Total PAH (18)	mg/kg	0.8	4.4	4.5	32	3
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.6	0.5	30	1
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3

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

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238485.094	LB262951.014	Arsenic, As	mg/kg	1	5	5	51	7
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	36	34	31	7
		Copper, Cu	mg/kg	0.5	67	64	31	5
		Nickel, Ni	mg/kg	0.5	16	15	33	6
		Lead, Pb	mg/kg	1	5	5	49	0
		Zinc, Zn	mg/kg	2	63	63	33	0
SE238486.003	LB262951.024	Arsenic, As	mg/kg	1	6	6	47	4
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	31	34	32	11
		Copper, Cu	mg/kg	0.5	61	61	31	0
		Nickel, Ni	mg/kg	0.5	16	19	33	15
		Lead, Pb	mg/kg	1	6	6	46	3
		Zinc, Zn	mg/kg	2	54	56	34	3
SE238486.013	LB262952.014	Arsenic, As	mg/kg	1	4	4	55	22
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	176	0
		Chromium, Cr	mg/kg	0.5	11	11	35	2
		Copper, Cu	mg/kg	0.5	45	44	31	3
		Nickel, Ni	mg/kg	0.5	8.5	8.2	36	3
		Lead, Pb	mg/kg	1	5	5	51	1
		Zinc, Zn	mg/kg	2	60	57	33	6

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

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

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

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

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

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

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238486.030	LB262969.014	Arsenic, As	mg/kg	1	7	6	46	15
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	133	0
		Chromium, Cr	mg/kg	0.5	13	12	34	1
		Copper, Cu	mg/kg	0.5	47	46	31	2
		Nickel, Ni	mg/kg	0.5	7.5	7.4	37	1
		Lead, Pb	mg/kg	1	5	5	50	6
		Zinc, Zn	mg/kg	2	59	61	33	3
SE238486.032	LB262952.024	Arsenic, As	mg/kg	1	10	10	40	3
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	22	21	32	2
		Copper, Cu	mg/kg	0.5	61	62	31	2
		Nickel, Ni	mg/kg	0.5	10	11	35	6
		Lead, Pb	mg/kg	1	7	7	45	2
		Zinc, Zn	mg/kg	2	48	52	34	7
SE238755.001	LB262969.024	Arsenic, As	mg/kg	1	<1	<1	200	0
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	1.6	1.8	59	10
		Copper, Cu	mg/kg	0.5	<0.5	<0.5	200	0
		Nickel, Ni	mg/kg	0.5	<0.5	<0.5	159	0
		Lead, Pb	mg/kg	1	3	3	61	4
		Zinc, Zn	mg/kg	2	260	220	31	18

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238486.027	LB262644.014		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	49	46	125	6
			TRH C29-C36	mg/kg	45	65	62	101	5
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	110	<110	129	4
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	110	98	119	7
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE238539.007	LB262644.025		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	83	110	76	29
			TRH C29-C36	mg/kg	45	73	73	92	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	160	180	95	16
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	177	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	130	160	93	18
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238486.030	LB262656.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
		Hydrocarbons	Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	7.9	50	0
			d8-toluene (Surrogate)	mg/kg	-	7.0	7.3	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.1	7.1	50	1
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0

Volatile Petroleum Hydrocarbons in Soil

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

Original	Duplicate	Parameter	Units	LOR

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

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

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

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

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

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE238486.030	LB262656.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	7.9	30	0
			d8-toluene (Surrogate)	mg/kg	-	7.0	7.3	30	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.1	7.1	30	1
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

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 %
LB262968.002	Mercury	mg/kg	0.05	0.22	0.2	70 - 130	109

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB262644.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	80
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	81
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	79
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	82
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	90
		p,p'-DDT	mg/kg	0.1	0.1	0.2	60 - 140	67
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	85

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB262644.002		Naphthalene	mg/kg	0.1	4.4	4	60 - 140	111
		Acenaphthylene	mg/kg	0.1	4.3	4	60 - 140	107
		Acenaphthene	mg/kg	0.1	4.4	4	60 - 140	111
		Phenanthrene	mg/kg	0.1	4.2	4	60 - 140	105
		Anthracene	mg/kg	0.1	4.1	4	60 - 140	103
		Fluoranthene	mg/kg	0.1	4.1	4	60 - 140	102
		Pyrene	mg/kg	0.1	4.6	4	60 - 140	116
		Benzo(a)pyrene	mg/kg	0.1	3.9	4	60 - 140	97
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	106
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	91
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	100

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

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB262951.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	103
	Cadmium, Cd	mg/kg	0.3	4.2	4.81	70 - 130	87
	Chromium, Cr	mg/kg	0.5	39	38.31	80 - 120	103
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	109
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	101
	Lead, Pb	mg/kg	1	93	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	280	273	80 - 120	103
LB262952.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	104
	Cadmium, Cd	mg/kg	0.3	4.1	4.81	70 - 130	86
	Chromium, Cr	mg/kg	0.5	40	38.31	80 - 120	104
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	110
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	102
	Lead, Pb	mg/kg	1	93	89.9	80 - 120	104
	Zinc, Zn	mg/kg	2	280	273	80 - 120	103
LB262969.002	Arsenic, As	mg/kg	1	310	318.22	80 - 120	97
	Cadmium, Cd	mg/kg	0.3	4.2	4.81	70 - 130	87
	Chromium, Cr	mg/kg	0.5	32	38.31	80 - 120	85
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	104
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	98
	Lead, Pb	mg/kg	1	92	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	270	273	80 - 120	98

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB262644.002		TRH C10-C14	mg/kg	20	48	40	60 - 140	120
		TRH C15-C28	mg/kg	45	49	40	60 - 140	123
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	93
	TRH F Bands	TRH >C10-C16	mg/kg	25	50	40	60 - 140	125
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	113
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	85

VOC's in Soil

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

Sample Number	Parameter	Units	LOR

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

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

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB262656.002	Monocyclic	Benzene	mg/kg	0.1	4.6	5	60 - 140	91
	Aromatic	Toluene	mg/kg	0.1	4.6	5	60 - 140	92
	Hydrocarbons	Ethylbenzene	mg/kg	0.1	4.4	5	60 - 140	87
		m/p-xylene	mg/kg	0.2	8.6	10	60 - 140	86
		o-xylene	mg/kg	0.1	4.6	5	60 - 140	92
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.6	10	70 - 130	96
		d8-toluene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.5	10	70 - 130	95

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB262656.002		TRH C6-C10	mg/kg	25	65	92.5	60 - 140	70
		TRH C6-C9	mg/kg	20	55	80	60 - 140	69
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.6	10	70 - 130	96
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.5	10	70 - 130	95
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	38	62.5	60 - 140	61

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

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

Mercury in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE238486.021	LB262968.004	Mercury	mg/kg	0.05	0.28	0.09	0.2	96

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Original	Spike	Recovery%
SE238486.021	LB262644.027		Naphthalene	mg/kg	0.1	<0.1	4	108
			2-methylnaphthalene	mg/kg	0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	<0.1	4	104
			Acenaphthene	mg/kg	0.1	<0.1	4	108
			Fluorene	mg/kg	0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	<0.1	4	102
			Anthracene	mg/kg	0.1	<0.1	4	98
			Fluoranthene	mg/kg	0.1	<0.1	4	99
			Pyrene	mg/kg	0.1	<0.1	4	109
			Benzo(a)anthracene	mg/kg	0.1	<0.1	-	-
			Chrysene	mg/kg	0.1	<0.1	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	<0.1	4	95
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	-	-
			Total PAH (18)	mg/kg	0.8	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	-	108
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	-	94
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	-	101

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

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE238485.085	LB262951.004	Arsenic, As	mg/kg	1	48	6.696794871	50	82
		Cadmium, Cd	mg/kg	0.3	42	0.101375161	50	84
		Chromium, Cr	mg/kg	0.5	67	34.62746203	50	65 ④
		Copper, Cu	mg/kg	0.5	94	64.05944707	50	59 ④
		Nickel, Ni	mg/kg	0.5	54	14.72474215	50	78
		Lead, Pb	mg/kg	1	45	5.313748030	50	80
		Zinc, Zn	mg/kg	2	84	55.22351561	50	58 ④
SE238486.004	LB262952.004	Arsenic, As	mg/kg	1	50	5	50	89
		Cadmium, Cd	mg/kg	0.3	43	<0.3	50	86
		Chromium, Cr	mg/kg	0.5	69	33	50	73
		Copper, Cu	mg/kg	0.5	76	38	50	75
		Nickel, Ni	mg/kg	0.5	55	13	50	83
		Lead, Pb	mg/kg	1	48	7	50	83
		Zinc, Zn	mg/kg	2	86	56	50	60 ④
SE238486.021	LB262969.004	Arsenic, As	mg/kg	1	56	12	50	89
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	88
		Chromium, Cr	mg/kg	0.5	49	2.9	50	93
		Copper, Cu	mg/kg	0.5	57	11	50	92
		Nickel, Ni	mg/kg	0.5	48	1.5	50	92
		Lead, Pb	mg/kg	1	50	8	50	85
		Zinc, Zn	mg/kg	2	84	91	50	-15 ⑨

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE238486.021	LB262644.027	TRH C10-C14	mg/kg	20	42	<20	40	105
		TRH C15-C28	mg/kg	45	83	<45	40	168 ⑨
		TRH C29-C36	mg/kg	45	78	<45	40	130
		TRH C37-C40	mg/kg	100	<100	<100	-	-

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

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE238486.021	LB262644.027		TRH C10-C36 Total	mg/kg	110	200	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	TRH >C10-C16	mg/kg	25	45	<25	40	113
		Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	45	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	120	<90	40	195 ◎
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE238486.021	LB262656.004	Monocyclic	Benzene	mg/kg	0.1	4.1	<0.1	5	81
		Aromatic	Toluene	mg/kg	0.1	4.4	<0.1	5	88
		Hydrocarbons	Ethylbenzene	mg/kg	0.1	4.1	<0.1	5	81
			m/p-xylene	mg/kg	0.2	8.1	<0.2	10	81
			o-xylene	mg/kg	0.1	4.3	<0.1	5	86
		Polycyclic	Naphthalene (VOC)	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.8	8.3	10	78
			d8-toluene (Surrogate)	mg/kg	-	7.5	8.1	10	75
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.7	8.3	10	77
		Totals	Total Xylenes	mg/kg	0.3	12	<0.3	-	-
			Total BTEX	mg/kg	0.6	25	<0.6	-	-

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE238486.021	LB262656.004		TRH C6-C10	mg/kg	25	72	<25	92.5	78
			TRH C6-C9	mg/kg	20	63	<20	80	79
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.8	8.3	10	78
			d8-toluene (Surrogate)	mg/kg	-	7.5	8.1	10	75
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.7	8.3	-	77
		VPH F	Benzene (F0)	mg/kg	0.1	4.1	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	47	<25	62.5	75

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

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

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

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

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

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

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

Chain of Custody Form – Ref 13592-4

Ref:	13592-1
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800
Telephone:	(02) 6361 4954
Email:	felipe@envirowest.net.au
Contact Person:	Felipe Canavez
Invoice:	accounts@envirowest.net.au
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015
Quotation #:	Envir_70119_2019
Courier/CN:	Grants Express

			Sample matrix			**Sample preservation**			**Analysis**							
									SGS Method Code							
									CL1T	**CL10**	**OCP**					
	Sample ID	**Container***	**Sampling Date/Time**	Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	CL1T (7 metals)	CL10 (TRH, BTEXN, PAH, 8 metals)	OCP				
1	GC297	A	28/10/2022		X		X		X	X						
2	GC298	A	28/10/2022		X		X		X	X						
3	GC299	A	28/10/2022		X		X		X	X						
4	GC300	A	28/10/2022		X		X		X	X						
5	GC301	A	28/10/2022		X		X		X	X						
6	GC302	A	28/10/2022		X		X		X	X						
7	GC303	A	28/10/2022		X		X		X	X						
8	GC304	A	28/10/2022		X		X		X	X						
9	GC305	A	28/10/2022		X		X		X	X						
10	GC306	A	28/10/2022		X		X		X	X						
11	GC307	A	28/10/2022		X		X		X	X						
12	GC308	A	28/10/2022		X		X		X	X						
13	GC309	A	28/10/2022		X		X		X	X						
14	GC310	A	28/10/2022		X		X		X	X						
15	GC311	A	28/10/2022		X		X		X	X						
16	GC312	A	27/10/2022		X		X		X	X						
17	GC313	A	27/10/2022		X		X		X	X						
5	SL1	A	28/10/2022			X	X		X	X		X				
7	SL2	A	28/10/2022			X	X		X	X		X				
9	SL3	A	28/10/2022			X	X		X	X		X				
11	HS1	A	27/10/2022		X		X		X		X					
12	HS2	A	27/10/2022		X		X		X		X					
13	HS3	A	27/10/2022		X		X		X		X					

SGS EHS Sydney COC
SE238486

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler name: Felipe Canavez
Date: 31/10/2022 Time: 1400

Relinquished by: (print and signature)	Virginia Bragg	Date: 20/10/2022	Time 1400	Received by: (print and signature)	Date / Time
					01/11/22 @ 7:10

Chain of Custody Form – Ref 13592-4

Ref:	13592-1
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800
Telephone:	(02) 6361 4954
Email:	felipe@envirowest.net.au
Contact Person:	Felipe Canavez
Invoice:	accounts@envirowest.net.au
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015
Quotation #:	Envir_70119_2019
Courier/CN:	Grants Express

			Sample matrix			**Sample preservation**			**Analysis**							
									SGS Method Code							
									CL1T	**CL10**	**OCP**					
	Sample ID	**Container***	**Sampling Date/Time**	Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	CL1T (7 metals)	CL10 (TRH, BTEXN, PAH, 8 metals)	OCP				
24	HS4	A	27/10/2022		X		X		X		X					
25	HS5	A	27/10/2022		X		X		X		X					
26	HS6	A	27/10/2022		X		X		X		X					
27	HS7	A	27/10/2022		X		X		X		X					
28	HS8	A	27/10/2022		X		X		X		X					
29	HS9	A	28/10/2022		X		X		X		X					
30	HS10	A	28/10/2022		X		X		X		X					
31	DA16	A	28/10/2022		X		X		X	X						
32	DA17	A			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: 31/10/2022 Time: 1400

Relinquished by: (print and signature) Virginia Bragg Date: 20/10/2022 Time 1400

Received by: (print and signature) S. Subaray Date 01/11/22 Time @ 7.10

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

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	61 2 63614954
Facsimile	(Not specified)
Email	felipe@envirowest.net.au
Project	**13592-5**
Order Number	**13592-5**
Samples	1

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE239262 R1**
Date Received	18/11/2022
Date Reported	25/11/2022

COMMENTS

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

This report cancels and supersedes the report No.SE239262 R0 dated 24/11/22 issued by SGS Environment, Health and Safety due to amended job ID as requested.

SIGNATORIES

Dong LIANG
Metals/Inorganics Team Leader

Huong CRAWFORD
Production Manager

Kamrul AHSAN
Senior Chemist

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 21/11/2022

PARAMETER	UOM	LOR	GC229 SOIL - 17/11/2022 SE239262.001
Arsenic, As	mg/kg	1	**9**
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.5	**33**
Copper, Cu	mg/kg	0.5	**46**
Lead, Pb	mg/kg	1	**6**
Nickel, Ni	mg/kg	0.5	**13**
Zinc, Zn	mg/kg	2	**48**

Moisture Content [AN002] Tested: 21/11/2022

PARAMETER	UOM	LOR	GC229 SOIL - 17/11/2022 SE239262.001
% Moisture	%w/w	1	**18.5**

METHOD SUMMARY

SE239262 R1

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.

FOOTNOTES

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

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

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

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

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

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

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

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

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

STATEMENT OF QA/QC PERFORMANCE

SE239262 R1

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	61 2 63614954
Facsimile	(Not specified)
Email	felipe@envirowest.net.au
Project	**13592-5**
Order Number	**13592-5**
Samples	1

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE239262 R1**
Date Received	18 Nov 2022
Date Reported	25 Nov 2022

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:

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

SAMPLE SUMMARY

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	1 Soil
Date documentation received	18/11/2022	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	12.7C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

HOLDING TIME SUMMARY

SE239262 R1

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC229	SE239262.001	LB264400	17 Nov 2022	18 Nov 2022	01 Dec 2022	21 Nov 2022	26 Nov 2022	23 Nov 2022

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GC229	SE239262.001	LB264395	17 Nov 2022	18 Nov 2022	16 May 2023	21 Nov 2022	16 May 2023	23 Nov 2022

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

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

No surrogates were required for this job.

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

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

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

Sample Number	Parameter	Units	LOR	Result
LB264395.001	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

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

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

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

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

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

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE239262.001	LB264400.008	% Moisture	%w/w	1	18.5	21.0	35	13

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 %
SE239124.004	LB264395.014	Arsenic, As	mg/kg	1	3	3	62	3
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	22	21	32	5
		Copper, Cu	mg/kg	0.5	12	10	35	11
		Nickel, Ni	mg/kg	0.5	9.4	8.2	36	13
		Lead, Pb	mg/kg	1	8	8	43	9
		Zinc, Zn	mg/kg	2	26	22	38	14
SE239262.001	LB264395.021	Arsenic, As	mg/kg	1	9	7	43	16
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	33	33	32	2
		Copper, Cu	mg/kg	0.5	46	45	31	4
		Nickel, Ni	mg/kg	0.5	13	13	34	3
		Lead, Pb	mg/kg	1	6	6	47	1
		Zinc, Zn	mg/kg	2	48	49	34	2

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB264395.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	110
	Cadmium, Cd	mg/kg	0.3	4.9	4.81	70 - 130	101
	Chromium, Cr	mg/kg	0.5	40	38.31	80 - 120	103
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	111
	Nickel, Ni	mg/kg	0.5	200	187	80 - 120	106
	Lead, Pb	mg/kg	1	97	89.9	80 - 120	108
	Zinc, Zn	mg/kg	2	290	273	80 - 120	105

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

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

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%
SE239365.001	LB264395.004	Arsenic, As	mg/kg	1	61	9	50	103
		Cadmium, Cd	mg/kg	0.3	49	0.3	50	98
		Chromium, Cr	mg/kg	0.5	56	3.6	50	104
		Copper, Cu	mg/kg	0.5	100	32	50	143 ⑨
		Nickel, Ni	mg/kg	0.5	56	3.5	50	105
		Lead, Pb	mg/kg	1	160	130	50	76
		Zinc, Zn	mg/kg	2	190	160	50	61 ⑨

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

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

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

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

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

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

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

Chain of Custody Form – Ref 13592-5

Ref:	**12592-5**	**Sample matrix**			**Sample preservation**			**Analysis**						
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800							**SGS Method Code**						
Telephone:	(02) 6361 4954							**CL1T**						
Email:	felipe@envirowest.net.au													
Contact Person:	Felipe Canavez													
Invoice:	accounts@envirowest.net.au													
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015	Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	7 METALS						
Quotation #:	Envir_70119_2019													
Courier/CN:	Grants Express													
Sample ID	**Container***	**Sampling Date/Time**												
GC229	A	17/11/2022		X		X		X	X					

SGS EHS Sydney COC

SE239262

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler name: Felipe Canavez
Date : 17/11/2022 Time:13:00

Relinquished by: (print and signature) Virginia Bragg Date 17/11/2022 Time 15:00

Received by: (print and signature) B. Subarrey Date 18/11/22 Time @ 7:30

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= Plastic with orange label

Appendix 4. 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 5. Analytical results

Table A7.1. General site analytical results and threshold concentrations (composite) - heavy metals (mg/kg)

Sample ID	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc
GC1	5	<0.3	10	16	5	3.8	24
GC2	9	<0.3	11	13	7	3.7	24
GC3	3	<0.3	3.8	8.8	5	2.2	29
GC4	3	<0.3	4.0	8.9	5	2.2	28
GC5	3	<0.3	3.6	7.9	5	1.9	28
GC6	3	<0.3	3.4	7.5	5	1.7	25
GC7	3	<0.3	3.4	7.7	5	1.6	22
GC8	2	<0.3	2.7	8.2	4	1.5	16
GC9	4	<0.3	3.2	6.6	5	1.4	22
GC10	4	<0.3	4.6	7.3	5	1.8	18
GC11	7	<0.3	16	39	4	6.4	43
GC12	6	<0.3	21	28	6	9.1	36
GC13	5	<0.3	27	37	6	9.1	37
GC14	8	<0.3	22	35	4	9.0	30
GC15	5	<0.3	10	15	4	3.6	21
GC16	3	<0.3	3.4	6.4	4	1.6	23
GC17	5	<0.3	4.7	6.4	4	2.2	21
GC18	3	<0.3	2.6	7.5	4	1.5	20
GC19	2	<0.3	3.4	6.4	4	1.6	23
GC20	6	<0.3	3.2	7.0	4	1.5	19
GC21	4	<0.3	3.1	6.1	3	1.5	17
GC22	6	<0.3	4.5	7.6	4	2.3	13
GC23	5	<0.3	4.5	11	5	2.6	28
GC24	5	<0.3	27	41	4	11	36
GC25	12	<0.3	16	43	3	7.3	38
GC26	3	<0.3	6.6	11	4	2.3	21
GC27	10	<0.3	3.8	6.2	4	1.9	14
GC28	5	<0.3	5.5	6.9	5	3.6	18
GC29	3	<0.3	4.5	6.6	4	2.4	20
GC30	2	<0.3	3.8	7.5	5	2.0	23
GC31	3	<0.3	3.8	7.3	6	2.1	20
GC32	3	<0.3	4.3	6.5	4	1.9	19
GC33	3	<0.3	4.2	7.4	5	2.8	24
GC34	3	<0.3	3.5	6.7	5	1.4	16
GC35	6	<0.3	20	38	11	5.8	28
GC36	5	<0.3	18	15	5	5.3	40
GC37	3	<0.3	35	38	4	15	48
GC38	4	<0.3	25	27	4	9.9	45
GC39	4	<0.3	11	11	5	3.2	19
GC40	6	<0.3	16	19	6	4.8	23
GC41	3	<0.3	7.3	8.7	4	2.5	22

Sample ID	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc
GC42	3	<0.3	5.3	7.2	4	2.7	22
GC43	3	<0.3	4.7	6.3	4	2.3	20
GC44	2	<0.3	2.1	6.2	6	1.3	20
GC45	4	<0.3	3.4	4.2	6	1.8	13
GC46	3	<0.3	5.0	4.2	11	2.1	17
GC47	2	<0.3	3.5	5.0	4	1.8	18
GC48	2	<0.3	3.3	4.5	3	1.7	18
GC49	3	<0.3	4.1	10	4	2.3	31
GC50	8	<0.3	48	50	4	21	63
GC51	3	<0.3	39	38	4	12	55
GC52	4	<0.3	48	51	4	16	59
GC53	3	<0.3	26	35	4	13	62
GC54	5	<0.3	36	40	3	17	59
GC55	4	<0.3	41	31	5	17	53
GC56	4	<0.3	55	34	6	20	67
GC57	4	<0.3	31	31	4	15	53
GC58	6	<0.3	39	37	5	13	45
GC59	8	<0.3	35	51	6	17	59
GC60	4	<0.3	8.1	8.8	5	2.7	21
GC61	6	<0.3	32	37	9	11	50
GC62	5	<0.3	17	17	5	5.5	39
GC63	5	<0.3	7.4	8.2	4	2.4	22
GC64	2	<0.3	4.0	5.6	4	2.1	23
GC65	2	<0.3	3.6	5.0	4	1.8	23
GC66	3	<0.3	3.5	5.6	4	1.6	18
GC67	4	<0.3	25	34	7	9.2	41
GC68	4	<0.3	4.0	5.2	5	1.8	19
GC69	2	<0.3	3.3	4.2	5	1.5	15
GC70	2	<0.3	3.6	3.9	4	1.5	13
GC71	2	<0.3	4.1	6.0	5	2.1	17
GC72	2	<0.3	2.9	4.5	4	1.3	15
GC73	2	<0.3	2.1	4.6	4	1.2	13
GC74	2	<0.3	4.9	4.1	4	1.7	12
GC75	3	<0.3	5.9	6.6	5	1.9	18
GC76	7	<0.3	23	24	5	7.2	32
GC77	3	<0.3	14	6.2	5	2.2	14
GC78	2	<0.3	6.7	5.2	4	1.8	16
GC79	4	<0.3	8.9	5.2	5	3.4	10
GC80	2	<0.3	2.7	4.6	4	1.2	14
GC81	2	<0.3	2.8	5.6	4	1.2	26
GC82	3	<0.3	5.5	4.2	4	2.7	14
GC83	3	<0.3	4.2	3.7	4	1.5	14

Sample ID	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc
GC84	2	<0.3	4.5	3.8	4	1.8	12
GC85	3	<0.3	3.2	6.9	4	1.7	17
GC86	2	<0.3	1.9	4.5	4	1.1	14
GC87	3	<0.3	5.0	6.5	4	2.7	19
GC88	2	<0.3	4.0	4.1	4	1.7	14
GC89	3	<0.3	3.7	6.0	4	1.5	17
GC90	3	<0.3	4.1	6.8	5	2.2	17
GC91	5	<0.3	8.2	14	4	3.2	23
GC92	2	<0.3	3.8	4.9	4	1.4	12
GC93	2	<0.3	3.3	5.3	5	1.5	17
GC94	2	<0.3	2.3	4.5	4	1.1	12
GCp5	2	<0.3	3.1	5.8	5	1.9	22
GC96	3	<0.3	3.4	9.5	5	3.5	36
GC97	3	<0.3	8.8	8.6	5	6.9	26
GC98	3	<0.3	2.9	4.5	6	2	17
GC99	4	<0.3	7.9	7.5	5	3.2	26
GC100	2	<0.3	2.5	7.8	4	1.4	25
GC101	2	<0.3	2.7	5.8	5	1.4	19
GC102	2	<0.3	2.9	5.2	4	1.2	13
GC103	2	<0.3	4.2	5.2	3	1.5	14
GC104	4	<0.3	15	30	5	7.1	40
GC105	2	<0.3	2.7	8	5	1.5	20
GC106	2	<0.3	4.1	6.5	5	1.8	23
GC107	2	<0.3	4.6	6.2	4	1.7	21
GC108	3	<0.3	8.7	5.1	7	1.9	16
GC113	2	<0.3	2.3	7.9	4	1.4	23
GC114	3	<0.3	3	8.4	4	1.9	21
GC115	3	<0.3	4.7	4.5	5	1.6	15
GC116	3	<0.3	6	3.8	4	1.3	12
GC117	4	<0.3	5	4.4	5	1.8	17
GC121	6	<0.3	75	57	9	18	34
GC122	5	<0.3	52	40	8	18	31
GC123	6	<0.3	44	44	8	11	31
GC124	6	<0.3	20	38	6	12	48
GC125	3	<0.3	30	36	5	13	46
GC126	4	<0.3	29	35	6	8.7	34
GC127	4	<0.3	27	33	4	8.6	39
GC128	4	<0.3	43	40	4	14	42
GC129	4	<0.3	40	56	3	15	48
GC130	5	<0.3	53	58	8	23	45
GC131	6	<0.3	67	52	8	21	46
GC132	4	<0.3	71	63	7	25	48

Sample ID	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc
GC133	4	<0.3	67	59	6	25	46
GC134	5	<0.3	61	52	6	20	49
GC135	5	<0.3	27	28	6	7.7	39
GC136	5	<0.3	26	60	5	8.9	38
GC137	4	<0.3	21	28	5	8.3	46
GC138	4	<0.3	25	35	4	8.3	44
GC139	2	<0.3	32	58	3	12	44
GC140	4	<0.3	37	36	5	9.4	41
GC141	5	<0.3	45	31	5	11	40
GC142	5	<0.3	43	29	4	11	44
GC143	4	<0.3	22	35	5	9	58
GC144	3	<0.3	19	12	5	4.2	28
GC145	5	<0.3	11	25	5	5.9	39
GC146	4	<0.3	3.4	7.9	6	1.7	19
GC147	4	<0.3	4.9	6.4	5	2.2	23
GC148	4	<0.3	3.7	5.6	4	1.7	16
GC149	4	<0.3	2.9	7.6	4	1.6	18
GC150	5	<0.3	7.8	20	4	4	32
GC151	9	<0.3	19	49	7	9.9	54
GC152	9	<0.3	25	56	7	11	61
GC153	6	<0.3	19	45	6	9.2	50
GC154	4	<0.3	31	38	5	10	50
GC155	6	<0.3	27	45	5	9.9	51
GC156	4	<0.3	36	40	5	9.9	40
GC157	4	<0.3	26	36	10	9.8	45
GC158	6	<0.3	22	40	7	6.1	36
GC159	4	<0.3	27	34	6	8	38
GC160	10	<0.3	29	35	9	7.6	48
GC161	6	<0.3	19	37	8	8.5	53
GC162	7	<0.3	52	50	6	18	50
GC163	6	<0.3	60	47	8	19	41
GC164	6	<0.3	63	54	6	27	49
GC165	7	<0.3	40	39	10	14	40
GC166	9	<0.3	21	52	6	8.9	55
GC167	10	<0.3	22	65	6	10	79
GC168	8	<0.3	20	48	6	9.2	66
GC169	7	<0.3	19	48	7	9.7	63
GC170	8	<0.3	17	52	7	7.5	47
GC171	9	<0.3	22	55	8	9	58
GC172	8	<0.3	17	46	7	7	69
GC173	8	<0.3	20	46	6	8	41
GC174	7	<0.3	15	39	6	7	42

Sample ID	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc
GC175	5	<0.3	4	7.9	5	1.8	20
GC176	4	<0.3	3.3	5.3	5	1.5	14
GC177	12	<0.3	27	73	7	13	67
GC178	8	<0.3	21	50	6	9.1	49
GC179	9	<0.3	23	55	8	9.1	53
GC180	11	<0.3	24	78	7	11	61
GC181	11	<0.3	24	65	7	11	60
GC182	13	<0.3	22	71	7	10	51
GC183	16	<0.3	25	74	8	12	62
GC184	15	<0.3	21	81	7	11	55
GC185	20	0.3	31	83	8	13	58
GC186	6	<0.3	6.6	13	6	3	26
GC187	12	<0.3	23	62	7	9.5	52
GC188	14	<0.3	25	78	6	12	56
GC189	20	<0.3	32	99	7	15	65
GC190	17	<0.3	21	80	7	10	52
GC191	14	<0.3	25	77	8	10	55
GC192	11	<0.3	27	63	5	11	50
GC193	12	<0.3	26	72	7	11	58
GC194	12	<0.3	17	65	5	9.2	59
GC195	14	<0.3	30	71	6	12	59
GC196	14	<0.3	25	75	14	12	70
GC197	10	<0.3	25	73	9	12	70
GC198	7	<0.3	20	43	6	8.9	47
GC199	12	<0.3	23	68	5	10	58
GC200	15	<0.3	25	77	7	11	71
GC201	15	<0.3	25	80	6	12	57
GC202	14	<0.3	25	81	6	12	59
GC203	17	<0.3	39	84	7	14	50
GC204	15	<0.3	29	70	7	9.5	49
GC205	17	<0.3	25	85	6	12	52
GC206	18	<0.3	23	82	6	10	54
GC207	14	<0.3	29	69	6	11	52
GC208	11	<0.3	21	55	6	7.9	50
GC209	14	<0.3	24	67	6	10	55
GC210	14	<0.3	26	72	6	11	61
GC211	10	<0.3	21	53	6	8.5	58
GC212	14	<0.3	22	71	5	11	63
GC213	9	<0.3	23	58	6	9.9	60
GC214	14	<0.3	23	68	6	14	60
GC215	6	<0.3	32	53	7	21	65
GC216	6	<0.3	23	43	5	15	67

Sample ID	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc
GC217	7	<0.3	22	39	4	14	73
GC218	8	<0.3	22	48	5	12	62
GC219	9	<0.3	27	53	6	14	68
GC220	7	<0.3	31	55	5	14	56
GC221	16	<0.3	30	77	7	14	57
GC222	16	<0.3	32	76	7	13	71
GC223	10	<0.3	29	67	5	17	52
GC224	10	<0.3	30	56	6	15	59
GC225	13	<0.3	36	69	5	19	56
GC226	9	<0.3	30	54	5	12	58
GC227	16	<0.3	53	72	6	39	57
GC228	11	<0.3	31	60	4	15	57
GC229	9	<0.3	33	46	6	13	48
GC230	8	<0.3	36	45	6	13	56
GC231	9	<0.3	35	56	6	15	57
GC232	7	<0.3	37	51	5	17	62
GC233	9	<0.3	35	66	5	14	54
GC234	6	<0.3	26	44	5	12	57
GC235	10	<0.3	17	40	4	11	72
GC236	6	<0.3	27	40	5	13	70
GC237	6	<0.3	23	42	5	13	72
GC238	7	<0.3	24	56	5	15	62
GC239	6	<0.3	40	54	5	19	60
GC240	10	<0.3	32	74	7	15	69
GC241	9	<0.3	38	58	8	16	57
GC242	7	<0.3	22	52	5	12	55
GC243	7	<0.3	38	43	6	13	59
GC244	8	<0.3	38	50	5	14	50
GC245	17	<0.3	49	72	6	14	59
GC246	20	<0.3	38	69	7	13	55
GC247	4	<0.3	20	42	7	12	53
GC248	6	<0.3	33	38	11	11	35
GC249	5	<0.3	17	46	7	10	51
GC250	6	<0.3	19	47	7	10	57
GC251	8	<0.3	20	57	7	12	56
GC252	5	<0.3	12	40	5	8.7	53
GC253	9	<0.3	22	60	7	12	73
GC254	12	<0.3	26	70	7	12	71
GC255	5	<0.3	15	54	5	10	70
GC256	7	<0.3	15	88	5	11	70
GC257	5	<0.3	14	68	6	10	68
GC258	5	<0.3	13	54	5	8.4	65

Sample ID	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc
GC259	5	<0.3	18	52	6	11	61
GC260	4	<0.3	20	46	5	12	60
GC261	6	<0.3	33	53	10	16	48
GC262	5	<0.3	31	44	8	13	49
GC263	3	<0.3	20	59	5	14	40
GC264	5	<0.3	21	36	6	10	54
GC265	9	<0.3	34	72	5	18	58
GC266	4	<0.3	21	60	6	13	70
GC267	5	<0.3	12	55	5	8.7	64
GC268	9	<0.3	11	76	5	9.5	58
GC269	9	<0.3	11	85	5	9.3	60
GC270	8	<0.3	14	91	7	9.5	60
GC271	6	<0.3	26	74	6	14	60
GC272	7	<0.3	8.2	77	5	8.4	53
GC273	14	<0.3	11	89	7	9.6	65
GC274	7	<0.3	11	64	4	8.1	54
GC275	6	<0.3	28	70	5	16	79
GC276	6	<0.3	30	80	5	17	63
GC277	4	<0.3	29	58	5	15	50
GC278	5	<0.3	27	45	5	12	48
GC279	4	<0.3	24	40	5	11	52
GC280	4	<0.3	27	55	5	13	50
GC281	6	<0.3	34	57	5	19	50
GC282	6	<0.3	31	75	5	16	47
GC283	5	<0.3	40	51	6	14	63
GC284	5	<0.3	29	49	4	12	47
GC285	6	<0.3	31	60	4	15	56
GC286	7	<0.3	35	64	5	15	55
GC287	4	<0.3	16	57	4	9.1	57
GC288	6	<0.3	13	57	5	8.1	59
GC289	8	<0.3	23	68	5	10	63
GC290	4	<0.3	19	53	5	17	57
GC291	6	<0.3	21	45	5	13	63
GC292	5	<0.3	20	44	5	11	56
GC293	5	<0.3	11	44	4	7.9	56
GC294	4	<0.3	16	41	4	9.5	53
GC295	5	<0.3	36	67	5	16	63
GC296	4	<0.3	25	45	5	13	58
GC297	8	<0.3	30	65	5	15	62
GC298	5	<0.3	26	43	7	12	48
GC299	6	<0.3	31	61	6	16	54
GC300	5	<0.3	33	38	7	13	56

Sample ID	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc
GC301	5	<0.3	22	41	9	11	51
GC302	4	<0.3	29	32	6	13	55
GC303	5	<0.3	32	41	5	15	56
GC304	6	<0.3	33	44	6	21	56
GC305	6	<0.3	28	46	29	15	68
GC306	5	<0.3	25	41	41	13	76
GC307	4	<0.3	30	37	4	13	70
GC308	5	<0.3	41	53	4	18	61
GC309	4	<0.3	11	45	5	8.5	60
GC310	6	<0.3	21	39	3	13	60
GC311	5	<0.3	20	41	5	11	56
GC312	5	<0.3	34	50	6	14	46
GC313	6	<0.3	62	63	10	28	56
Arithmetic mean	6.27	-	20.86	38.59	5.67	9.19	43.17
Standard deviation	0.22	-	0.84	1.44	0.16	0.34	1.05
Maximum	20	<0.3	75	99	41	39	79
Median	5.00	<0.30	21	41	5	9.85	48
Confidence interval	0.44	-	1.65	2.84	0.32	0.68	2.07
95% UCL	6.70	-	22.51	41.43	6.00	9.87	45.25
Number	306	306	306	306	306	306	306
Health Investigation Levels – Residential land-use threshold (NEPC 1999)							
	100	*20*	*100[1]*	*6,00*	*300*	*400*	*7,400*
Ecological Investigation Levels – Residential land-use threshold (NEPC 1999)							
	100	*-*	*620[2]*	*100*	*1,100*	*170*	*260*

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

Statistical analysis assumes the value of non-detects are equal to the detection limit. This is considered a conservative approach.