Limited detailed site investigation, Lot 3 DP1118635, 41 King Street, Tarago, NSW

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Executive summary

The property at 41 King Street (Lot 3 DP1118635), Tarago (the Site) is owned by Terry Geoghegan and Susan Buckley. These owners have received correspondence from Goulburn Mulwaree Regional Council soliciting their interest in rezoning the Site for further residential development (S. Buckley, pers. com., 18 May 2023). GroupOne was engaged to oversee the rezoning of this land, with Murrang Earth Sciences engaged to undertake a preliminary site investigation of the Site. The preliminary site investigation of the Site delivered by Murrang Earth Sciences found two potential contamination sources. These were dust, cut, fill from railway ballast or nearby mine(s); and pesticide use as a result of agricultural activities. A limited detailed site investigation was recommended by Murrang Earth Sciences to provide the necessary data to confirm whether these potential sources of contamination do occur.

The limited detailed site investigation recommended by Murrang Earth Sciences is presented herein and was undertaken in two parts. The first part involved planning field work. Part two of was commenced upon Murrang Earth Sciences' receipt of Chris Gunton's review of part one and involved sample collection and analysis.

Two sources of contamination were considered to occur at the Site, including pesticides; and mine tailings, slag, and/or dust. Based on these sources, lead, arsenic, DDT+DDE+DDD, aldrin and dieldrin, chlordane, endosulfan, endrin, heptachlor, hexachlorobenzene, methoxychlor, mirex, toxaphene, 2,4,5 T, 2,4 D, MCPA, MCPB, mecoprop, picloram, atrazine, chlorpyrifos, and bifenthrin were considered contaminants of concern. Ten locations were sampled at the Site. Samples were collected from the A horizon (i.e., a depth of approximately 0.1 to 0.1 m below ground surface) and from the top of the B horizon (i.e., a depth of approximately 0.1 below ground surface and below) at each location, due to the sources of contamination at the site being from the ground surface.

Chemicals of concern at the Site were below the adopted assessment criteria in all cases. No indications of contamination occurred at the Site. Based on this, chemicals of concern are considered to not present an unacceptable risk to human health and environmental receptors at the Site. The site is suitable for its proposed residential and environmental use, with no remediation necessary at the Site to make it suitable for these uses.

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Acknowledgement of country

Murrang is the Wiradjuri word for mud. Murrang Earth Sciences is grateful to the Wiradjuri people for their language. Our offices are proudly in Canberra on Ngunnawal and Ngambri Country. We acknowledge the Traditional Owners of the land on which we work, and their knowledge, culture, and spiritual connection to Country.

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1. Introduction

The property at 41 King Street (Lot 3 DP1118635), Tarago, New South Wales (NSW) is owned by Terry Geoghegan and Susan Buckley (the Site, Figure 1). These owners have received correspondence from Goulburn Mulwaree Regional Council soliciting their interest in rezoning the Site for further residential development (S. Buckley, pers. Com., 18 May 2023). GroupOne was engaged to oversee the rezoning of this land, with Murrang Earth Sciences engaged by GroupOne to undertake the preliminary site investigation necessary to inform land rezoning.

The preliminary site investigation of the Site delivered by Murrang Earth Sciences found that two potential contamination sources. These were dust, cut, fill from railway ballast or nearby mine(s); and pesticide use as a result of agricultural activities. A limited detailed site investigation was recommended to provide the necessary data to confirm whether these potential sources of contamination do occur[1]. The limited detailed site investigation recommended by Murrang Earth Sciences is presented herein and was undertaken in two parts. The first part involved planning field work, with these plans first reviewed by external reviewer Dr Chris Gunton, a Certified Environmental Practitioner General (1044) and Site Contamination Specialist (SC41045) within the Site Contamination Practitioners Australia Scheme, to ensure appropriate planning for the field work component of the detailed site investigation had taken place. Part two of this detailed site investigation assessment was commenced upon Murrang Earth Sciences' receipt of Chris' review and is also presented herein.

The aim of the limited detailed site investigation of 41 King Street, Tarago was to assess the contamination status of the Site by meeting the following objectives:

1) determine concentrations of lead, arsenic, herbicides, and pesticides that are considered potential contaminants of concern in soils at the Site to a sufficient degree that a risk assessment may be undertaken;
2) evaluate concentrations of contaminants of concern in soil samples for risk of harm to human health and the environment;
3) assess the suitability of the Site for its proposed development in relation to risk of harm to human health and the environment from contaminants of concern; and
4) make recommendations regarding any further assessment or remediation of the Site.

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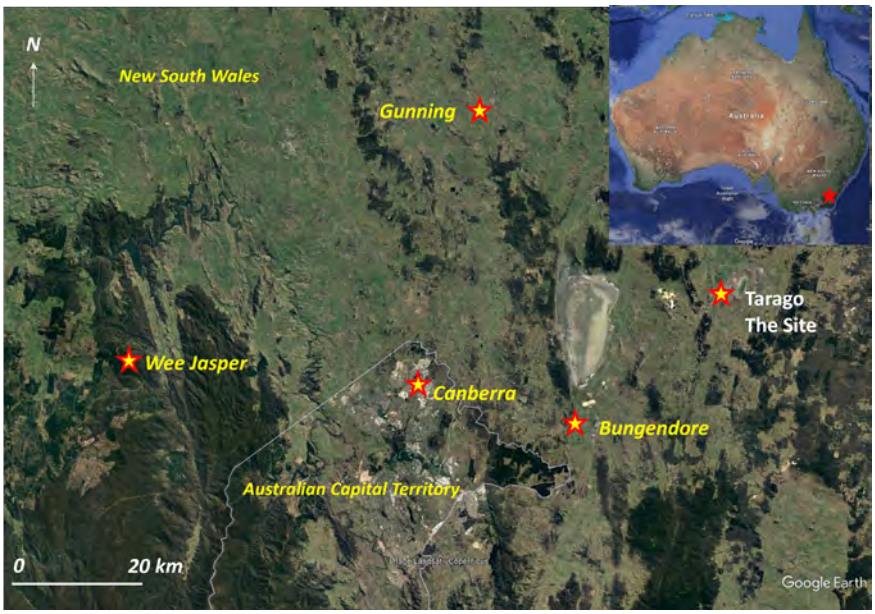

(a)

(b)

Figure 1. Location of the Site relative to (a) other localities in southern NSW and the Australian Capital Territory (ACT); and (b) Tarago. Boundaries are indicative only and figures not accurately drawn to scale

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This limited detailed site investigation report is framed in accordance with the National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM) 1999[2] (amended 2013) and the New South Wales Environment Protection Authority's (NSW EPA's) 2020 *"Consultants reporting on contaminated sites"* guidelines[3]. Under Schedule B1 (and others) of the ASC NEPM, potential risks associated with site contamination are constrained based on whether there are sources of contamination, receptors of this contamination, and if exposure and/or transport pathways between these sources and receptors are present or could be present. Areas within which potential sources of contamination occur are called areas of environmental concern (AECs), with contamination sources being either environmental or human. Environmental contamination sources refer to contaminants of concern that occur within a site due to natural processes, while human contamination sources are those that arise due to some form of current or previous human intervention. Whether contamination sources are natural or otherwise, contamination presents a chemical hazard—that is contamination has the potential to cause harm to human health and the environment, with the probability of a hazard causing harm termed the risk of harm in this context.

Details pertaining to aspects of the Site's geography relevant to contamination are presented first in this report, within Section 2. A summary of the Site's history, condition, surrounding environment, and how contamination was assumed to manifest at the Site (i.e., the preliminary conceptual site model) is presented in Section 3, with detailed information on these subjects presented in Murrang Earth Sciences preliminary site investigation of the Site[1]. The criteria and guidelines with which the risk to human health and the environment were evaluated at the Site, along with the regulatory framework enabling these guidelines, are presented in Section 4. The plan created to guide the collection and analysis of samples from the Site is then presented in Section 5.

Section 6 details the results of this limited detailed site investigation, including works undertaken to assess and ensure quality control; constrain how contamination manifests at the Site; risks to human health and the environment; and the Site's suitability for its proposed use. An assessment of how this detailed site investigation has complied with New South Wales regulatory requirements relating to contaminated site assessment is made in Section 7. Information gaps and limitations are presented in Section 8. Conclusions on the level of risk contamination presents to human health and the environment at the Site and its suitability for its proposed use are made in Section 9, with the references referred to in this report's text presented in Section 10.

The scope of works undertaken to deliver this detailed site investigation included:

- Development of a sampling, analysis, and quality plan
- Collection of samples from the Site
- Laboratory analysis of chemical concentrations in samples collected from the Site
- Assessment of laboratory analysis results against adopted guidelines
- Development and delivery of this reports
- External peer review

2. Site identification

The following information has been drawn from Murrang Earth Sciences preliminary investigation of the Site[1]. The Site is located in a temperate climate zone, with a mean annual rainfall of 400 to 600 mm and mean annual evaporation of 1600 to 1800 mm[4]. Evaporation therefore exceeds precipitation for much of the year, however, thunderstorms are expected to see surface water infiltrate soils below the depth of evaporation influence even during the hot, dry summer months. This means that under the right conditions, contaminants at the soil surface can be mobilised into deeper soil layers at the Site.

All areas except the western-most portion of the Site have an easterly aspect and slope towards Tarago, located approximately 20 m below the Site's 725 m AHD elevation. Run-off and erosion, or contamination impacted groundwater, if it were present within the vadose zone, is therefore considered likely to flow towards Tarago from the Site. Contaminants that occurred at or west of the Site residence were considered instead to have the propensity to flow west into an unnamed watercourse the rises immediately west of the Site's boundary.

A planning certificate for the Site (Section 10.7 (2) Planning Certificate under the Environmental Planning and Assessment Act 1979) was presented in Murrang Earth Sciences' preliminary site investigation[1]. Planning advice is outside Murrang Earth Sciences expertise. A statement with regards to the suitability of the Site for redevelopment is therefore outside the scope of works for this investigation, however, Murrang Earth Sciences understands that Planned Pty Ltd have been engaged to provide planning advice with regards to the Site's proposed rezoning works. Further details in relation to the Site are presented in Table 1.

3. Site history, condition, and surrounding environment

Contamination sources at the Site can be classified as environmental contamination sources and human contamination sources. Potential contamination sources at the Site were established in Murrang Earth Sciences' preliminary site investigation[1], with receptors of this contamination, and exposure/transport pathways between these sources and receptors at the Site established within a preliminary conceptual site model. A summary of this conceptual site model is presented in Section 3.1 below, and in full within Murrang Earth Sciences preliminary site investigation for the Site[1].

3.1 Preliminary conceptual site model

A conceptual site model is a description of how suspected or actual contamination at a Site is understood to cause harm to human health and/or the environment. The NSW EPA "*Consultants reporting on contaminated*

Table 1. Geographical details relevant to the Site and specified in the ASC NEPM

Item	Description
Site name or description	N/A
Street address (street number & name, suburb), town/city	41 King Street, Tarago, 2580 NSW
Property description (e.g. Section, hundred, plan, parcel)	Lot 3, DP1118635, Tarago
Current certificates of title (identifying portion or full title)	Murrang Earth Sciences' preliminary site investigation[1]
Latitude, longitude (centre of site)	-35.075625326, 149.637615159
Geographic coordinates using GDA94 / MGA	55 H 740691.56 m E, 6115403.14 m S
Elevation	725 m AHD
Current owner(s)	Terry Geoghegan and Susan Buckle
Current occupier(s)	Terry Geoghegan and Susan Buckle
Site area and dimensions	100393 m^2 (100 ha)
Local government authority	Goulburn Mulwaree Regional Council
Current zoning (planning)	RU2 Rural Landscape
Locality map	Figure 1
Trigger for assessment (e.g. Change in land use)	Proposed rezoning from RU2 to RU5
State or local government statutory controls assigned to the site	Multiple SEPPs; Goulburn Mulwaree Local Environmental Plan 2009[1]
Legal permission to access site required/obtained	N/A Permission via Client (GroupOne)
Consent of adjoining land owners and/or occupiers to access land (if required)	N/A

land" guidelines (2020)[2] describe the requirements of a conceptual site model as follows:

> *The essential elements of a conceptual site model are:*
>
> *b) known and potential sources of contamination and contaminants of concern including the mechanism(s) of contamination*
> *c) list of potentially affected media including biota if applicable*
> *d) list of human and ecological receptors (both on- and off-site)*
> *e) potential and complete exposure pathways (both on- and off-site, including preferential pathways which are of particular relevance to the assessment of vapour).*

This section outlines the preliminary conceptual model developed for the Site within Murrang Earth Sciences preliminary site investigation and that identified the means by which further investigations of contamination at the Site should occur.

Surface soils were the key receptor of contamination at the Site, where deposition, placement, or transport of mining- or railway ballast-associated metals onto surface site soils was considered to have potentially occurred as a result of historical mining and railway operations in the area surrounding the Site; and pesticides may have been sprayed onto plants or applied to animals as part of the Site's agricultural land use and had the potential

to be affecting soils from the surface down. The highest concentration of potential contaminants of concern was expected to be close or at the soil surface, based on this information. Decreasing impact was expected to occur with increasing soil depth in the event such contamination occurred. Impacted surface soils also presented the most likely contaminant exposure pathway to receptors, where dermal contact; consumption of soils by children; dust inhalation; and consumption of impacted fruit, vegetables, and eggs by humans and other fauna considered to be the main exposure pathways. Natural occurrences of metals at the Site were considered to be unlikely, based on the site geology outlined in Murrang Earth Sciences preliminary site investigation, whereby metals' deposits are located a number of kilometres from the Site and the rock types at the Site location are not conducive to mineral deposits.

No groundwater bores were present on Site, with rainwater tanks currently acting as the water supply to the Site's residence. The potential for an exposure pathway to exist between groundwater beneath the Site and Tarago residents was considered, in the event that soils were identified as a receptor that then acted as a source of contamination to groundwater during the detailed site investigation. This was due to groundwater being used as a source of drinking water by Tarago residents[6].

A range of activities that potentially contaminate the Tarago aquifer occur in the areas surrounding the Site. These are considered in the "*Draft Tarago Village Strategy: Goulburn Mulwaree Regional Council – October 2021*"[6], and were therefore considered outside the scope of works of this report.

None of the transport and exposure pathways presented within the preliminary site investigation were confirmed to occur, with no data collected during the preliminary site investigation's scope of works[1]. While there was expected to be some variability in the different components of the conceptual site model (i.e., differences in the concentrations of chemicals in soils; differences in the connectivity between soils and groundwater), such variability was considered to be due to differences in soil characteristics, where two soil types are known to occur across the Site, and whether fill or herbicide use has occurred in discrete areas[1]. The sampling regime used to close the information gap presented by the lack of data needed to account for this variability in site characteristics.

4. Guidelines and regulations

In the case of contamination assessments, guidelines are developed by regulators to maximise the adherence of those working on contaminated sites with legislative frameworks. Three guidelines were utilised for the purposes of this detailed site investigation. The New South Wales Environment Protection Authority (NSW EPA) *"Guidelines for consultants reporting on contaminated land: Contaminated lands guidelines*[3]*"* (The consultants reporting on contam. land guidelines) are statutory guidelines in NSW made under the Contaminated Land

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Management Act 1997 (CLM Act), with contaminated land regulated under the CLM Act. The consultants reporting on contam. land guidelines should thus be used and referred to in assessments of contaminated lands in NSW. The consultants reporting on contam. lands guidelines require contaminated site assessments refer to Schedules A and B of the National environment protection (assessment of site contamination) measure (1999)—that is the ASC NEPM[2]. As such, the ASC NEPM is also referred to in this document. Finally, the NSW EPA *"Sampling design guidelines part 1 – application"* guidelines (the sampling design guidelines), although made under the CLM Act, are complementary rather than statutory guidelines[5]. The sampling design guidelines were used to establish an appropriate sample regime for the Site.

Schedule A of the ASC NEPM presents the general process for the assessment of site contamination[2]. In this process a preliminary site investigation is first undertaken, followed by a detailed site investigation, with these two stages considered part of a Tier 1 risk assessment. Tier 2 and 3 risk assessments are to be undertaken in the event that the guidelines adopted from Schedule B of the ASC NEPM are exceeded and there is insufficient evidence with which to derive risk-based remediation strategies. The preliminary site investigation undertaken previously at the Site and the detailed site investigation presented herein are considered Tier 1 risk assessments under the ASC NEPM framework.

The potential for contaminants of concern to act as hazards to human health is evaluated in NSW and indeed all of Australia using human health criteria adopted from Schedule B of the ASC NEPM. The human health investigation level (HIL) criteria were developed using four different conceptual models—that is scenarios—of contaminant exposure, with these models differing in relation to sensitive populations, intensity, frequency, and means of exposure to soil contaminants[2]. The HIL A criteria, for example, were developed for scenarios where children are the most sensitive receptors likely to occur at a site and where children are frequently exposed to soils via gardens or through recreation. This scenario is used to model the risks of contamination within pre-schools. The HIL A scenario is considered most appropriate at the Site, as future residential development has the potential to allow for children to access soils via gardens and/or recreation. The HIL A criteria selected for the pesticides and toxic metals to be assessed at the Site are presented in Table 2.

Ecological investigation levels (EILs) for aged contaminants in urban residential soils adopted from the ASC NEPM were used to assess the potential hazard contaminants of concern identified in the soil present to the environment. Criteria for aged contaminants in the soil were used due to the potential for contaminants at the Site to have been present for more than 20 years, and aged criteria relating to contaminants present for at least two years. The EIL criteria available and selected for the pesticide and metal contaminants of potential concern are presented in Table 3.

Table 2. Health investigation level (HIL) criteria adopted from the National Environment Protection Measures (Assessment of Site Contamination) 1999 guidelines (ASC NEPM). The laboratory practical quantitation limits (PQLs), which are the lowest concentration the laboratory can analyse for accurately, are also presented for all contaminants of concern, with these provided by SGS Environmental as the selected laboratory

Chemical group	Analyte	HIL A (mg/kg)	Laboratory PQL (mg/kg)
Toxic metals	Lead	300	1.0
	Cadmium	20	0.3
	Chromium	100	0.5
	Copper	6000	0.5
	Nickel	400	0.5
	Zinc	7500	2.0
Arsenical pesticides	Arsenic	100	1.0
Organochlorine pesticide	DDT+DDE+DDD	240	0.1
	Aldrin and dieldrin	6	0.1 and 0.2
	Chlordane	50	0.1
	Endosulfan	270	0.2
	Endrin	10	0.2
	Heptachlor	6	0.1
	Hexachlorobenzene	10	0.1
	Methoxychlor	300	0.1
	Mirex	10	0.1
	Toxaphene	20	0.1
Phenoxy acid herbicide	2,4,5 T	600	0.01
	2,4 D	900	0.01
	MCPA	600	0.01
	MCPB	600	0.01
	Mecoprop	600	0.01
Pyridine	Picloram*	4500	0.01
Triazine herbicide	Atrazine	320	0.5
Organophosphate pesticide	Chlorpyrifos	160	0.2
Pyrethroid pesticide	Bifenthrin	600	0.5

Table 3. Ecological investigation levels for aged contaminants in urban soils calculated using the National Environment Protection Measures (Assessment of Site Contamination) 1999 (ASC NEPM) toolbox

Analyte	EIL (mg/kg)
Arsenic	50
Lead	270
DDT	180

Both the EIL and HIL A guidelines selected for the purposes of this limited detailed site investigation were above the selected laboratory's (i.e., SGS Environmental's) practical quantitation limits (PQL) for the contaminants of concern.

5. Sampling and analysis quality plan

The collection and chemical analyses of samples from the Site by the selected laboratory was undertaken in accordance with data quality objectives (DQOs), and in a way that ensured all data quality indicators (DQIs) were met. Data quality objectives (DQOs) are statements that define the purpose of contamination assessments to be undertaken, and the type, quantity, and quality of data needed to ensure robust gathering of evidence for risk-based decision making. Both field and laboratory work conducted in relation to chemicals of concern were assessed against DQOs, with the DQOs outlined in NSW EPA's "*Consultants reporting on contaminated land*"[3] adopted for these purposes in this report. The ASC NEPM is referred to in the NSW EPA's "*Consultants reporting on contaminated land*"[3] guidelines, with the ASC NEPM drawn upon where relevant. Data quality indicators (DQIs) are measures of the degree of acceptability or usability of sampling data for the detailed site investigation undertaken. Data quality objectives for this investigation, as well as the data quality indicators used to assess whether data quality objectives are met are detailed in Appendix A. A summary of Appendix A is presented in this section.

The works presented in Appendix A indicated ten locations needed to be sampled at the Site as part of this limited detailed site investigation. Samples were to be collected from the A horizon (i.e., a depth of approximately 0.1 to 0.1 m below ground surface) and from the top of the B horizon (i.e., a depth of approximately 0.1 below ground surface and below) at each location, due to the sources of contamination at the site being from the ground surface. Samples were to be collected using a hand auger by Julia Jasonsmith, with one sample to be collected in triplicate (i.e., three replicates were to be collected). A rinsate blank was also to be collected from the auger used to collect samples. Samples were to be collected from random locations established using a grid and as outlined in Appendix A. Sampling locations were also presented in Figure 2 below, for ease of use.

Figure 2. Location of samples to be collected from the Site on a systematic basis, whereby a random number generator within Microsoft Excel was used to generate sample locations within this grid. The background to the image presents the two soil types, Morass (eastern two-thirds of the Site) and Slight Hill (western third of the Site, known to occur at the Site and from which a proportionate number of samples must be collected. Further details are presented in Appendix A

6. Results and discussion

Quality control and quality assurance procedures were performed for both sample collection and laboratory analyses to ensure the accuracy and precision of sample results. In this section, the results and implications of the quality assurance/quality control procedures are outlined first for field work and then for laboratory analyses. An assessment of linkages between contamination sources, receptors, and the transport and exposure pathways between these two factors is described in Section 6.2, before an assessment of risks to human health and the environment and the Site's suitability is made in Section 6.3.

6.1 Quality assurance and quality control

Appendix A details the data quality objectives to be met for the purposes of this limited detailed site investigation. This section summarises the data quality measures actually undertaken, with those measures undertaken in the field first presented in Section 6.1.1, and those by the laboratory in Section 6.1.2.

6.1.1 Field quality assurance and quality control

Samples were collected from the Site on 27 June 2023 by Julia Jasonsmith, a consultant suitably qualified for contaminated site investigation, using a hand auger to excavate soils and a tape measure to assess sampling depth. Soils were placed directly onto grasses for assessment and logging. The samples placed on the grass were then separated into laboratory supplied jars with no preservative. Clean and new nitrile gloves were used to collect each sample. Jars were sealed and placed into an ice box with ice and chain-of-custody documentation for transport to the primary laboratory, SGS Australia, by courier. A secondary laboratory was not used for the purposes of this investigation. Excess excavated soils were placed back into excavations using a hand trowel.

Samples were received in appropriate condition by SGS (Appendix B). The sampling rate at which samples were collected from the Site was in accordance with Section B.1.5.1 in Appendix A of this report as follows.

Samples were collected from 10 locations across the whole of the Site, termed Area of Environmental Concern 1 (AEC 1). Two samples were collected from each location, with one sample collected from just below the soil surface, generally from a depth of 0.1 to 0.2 m below ground surface (m bgs), and a second sample from the top of the B horizon, at depths of up to 0.4 m bgs. Samples were collected using a hand auger, with soil adhered to the auger surface brushed off between sample locations using a brush brought to the Site for this purpose. Collection of a rinsate blank was required as part of this site investigation, to assess the potential for cross-contamination between samples caused by material being carried between sites on the hand auger used to excavate for samples. The rinsate blank was collected using rinsate water provided by SGS. Rinsate water was collected off the blade of the hand auger used to collect samples. Rinsate water destined for metals analysis was filtered in the field using 0.45 µm nylon filters. Analysis of this rinsate water showed no detection of analytes in any instances (Appendix C, Table C1). No indications of cross-contamination caused by the transferral of chemicals between samples from the hand auger is considered to have occurred.

At least two soil types were identified during field sampling based on field observations. In the western side of the Site, at the top of the slope, represented by Samples 5, 8, and 9, soils were either well-graded, fine, sands or sandy clays. In the east of the Site and mid-slope area, represented by all other samples collected for the purposes of this report, soil profiles consisted of red and brown clays (Figure 3). Samples were collected from across the Site as specified in Appendix A and are therefore considered representative of the Site as a whole. Sample details are presented in Table 3. Logs of the cores collected during sampling are presented in Appendix D.

Sample receipt notifications outline that sample container conditions, labelling, and turnaround times were appropriate (Appendix B). The use of trip spikes to ensure the integrity of potential volatile contaminants in samples being transported to the laboratory was not deemed necessary for the purposes of this assessment.

The absence of trip spikes is considered to have minimal effect on the outcome of this report as samples were received within the required holding times by the laboratory, limiting the time over which volatile contaminants could be lost from samples (Appendix B).

The potential for cross-contamination of samples during transport to the laboratory was considered low, with sample intactness assessed by SGS Environmental upon receipt of the samples at the laboratory. The use of a trip blank to measure cross-contamination in samples during sample transport was therefore deemed unnecessary and unlikely to affect the assessment of precision or accuracy of the analyses presented in this report. Samples were reported to be in good order upon receipt at the laboratory, indicating minimal risk of cross-contamination (Appendix B).

(a) (b)

Figure 3. (a) Soil core collected from sample site 8, in the north-western corner of the Site. Soils were sands or clayey-sands, with poor horizon development in this location; and (b) soil core collected from sample site 10, in the lower parts of the Site, where silty clay soils with gravels occurred

Table 3. Descriptions of samples collected and analysed from Lot 3 DP1118635, (41 King Street), Tarago

Sample	Sample depth (m bss)	Description	Odours / staining	Comments
Sample 1	0.1–0.2	Sandy CLAY: Grey-brown sandy CLAY. Fine, well-graded sands, no discernible colour.	No staining, no odour	Plant roots and rootlets, moist.
Sample 1	0.3–0.4	Sandy CLAY: Light grey-brown CLAY; Some fine gravels, subrounded, white and brown.	No staining, no odour	Plant roots and rootlets, moist. Very sandy, almost a sand.
Sample 2	0.1–0.2	Silty CLAY: Brown silty CLAY.	No staining, no odour	Plant roots and rootlets, moist.
Sample 2	0.2–0.25	Silty CLAY: Red-brown silty CLAY.	No staining, no odour	Plant roots and rootlets, moist.
Sample 3	0.1–0.2	Silty CLAY: Brown silty CLAY.	No staining, no odour	Plant roots and rootlets, moist.
Sample 3	0.2–0.3	Sandy CLAY: Light-brown sandy CLAY. Some fine to coarse, subangular to subrounded, grey-brown gravels.	No staining, no odour	Plant roots and rootlets, moist.
Sample 4	0.1–0.15	Silty CLAY: Brown silty CLAY.	No staining, no odour	Plant roots and rootlets, moist.
Sample 4	0.2–0.3	Sandy CLAY: Light-brown sandy CLAY. Some fine to coarse, subangular to subrounded, grey-brown gravels.	No staining, no odour	Plant roots and rootlets, moist.

Sample	Sample depth (m bss)	Description	Odours / staining	Comments
Sample 5	0.1–0.2	Sandy CLAY: Dark-brown CLAY; Medium, highly graded sands, (assumed to be) clear;	No staining, no odour	Plant roots and rootlets, moist.
Sample 5	0.3–0.4	Sandy CLAY: Grey-brown sandy CLAY; fine highly graded sands.	No staining, no odour	Plant roots and rootlets, moist.
Sample 6	0.1–0.2	Silty CLAY: Brown silty CLAY; some fine to coarse subangular gravels, white, brown, grey (colluvium).	No staining, no odour	Plant roots and rootlets, moist.
Sample 6	0.2–0.3	Silty CLAY: Red-brown silty CLAY; trace subrounded white gravels.	No staining, no odour	Plant roots and rootlets, moist.
Sample 7	0.1–0.2	Silty CLAY: Brown silty CLAY.	No staining, no odour	Plant roots and rootlets, moist.
Sample 7	0.25–0.35	Silty CLAY: Brown silty CLAY; subrounded, fine to coarse gravels.	No staining, no odour	Plant roots and rootlets, wet (groundwater ingress?).
Sample 8	0.1–0.2	Clayey SAND: well-graded, medium, rounded SANDS; brown clay.	No staining, no odour	Plant roots and rootlets, moist.
Sample 8	0.3–0.4	Clayey SAND: well-graded, medium, rounded SANDS; brown clay; some subangular to subrounded gravels (possibly granite)	No staining, no odour	Plant roots and rootlets, moist.
Sample 9	0.1–0.2	Sandy CLAY: brown CLAY; fine, rounded, clear sands.	No staining, no odour	Plant roots and rootlets, moist.
Sample 9	0.25–0.30	Silty CLAY: red-brown CLAY.	No staining, no odour	Plant roots and rootlets, moist.
Sample 10	0.1–0.2	Silty CLAY: brown silty CLAY.	No staining, no odour	Plant roots and rootlets, moist.
Sample 10	0.30–0.35	Silty CLAY: light-brown silty CLAY.	No staining, no odour	Plant roots and rootlets, wet (groundwater ingress).

6.1.2 Laboratory quality assurance and quality control

Laboratory quality assurance and quality control procedures undertaken to assess sample integrity and analytical precision included the following:

- Sample receipt notifications outline sample temperatures, container conditions and appropriateness, labelling, and turnaround times, with the sample receipt notification for this site presented in Appendix B. All samples were received within required parameters, with the potential for contaminants of concern to have migrated from sample vessels or be impacted by transport conditions therefore minimised. This is with the exception of sample temperatures. The temperature of samples was 11.4°C at the time of receipt, which is above the maximum temperature guideline of 6°C specified within the ASC NEPM[2]. This indicates that there was potential for volatile chemicals to flux from samples during sample transport to the laboratory. The impact of volatile chemicals fluxing from samples during transport to the laboratory is considered minimal, however, as the sampled material was collected from surface soils, exposed to ambient temperatures of up to approximately 42°C. This indicates any volatile chemicals that had the potential to flux from the soils would have done so at environmental temperatures rather than those of the esky within which the samples were transported. The exceedance of temperature guidelines by samples during transport was therefore considered unlikely to have had a negative impact on analytical precision or accuracy in this instance.
- Holding times for sample extraction were met for all samples and all analytes.
- Laboratory practical quantitation limits (PQLs)/laboratory limits of reporting (LORs) were below the adopted guidelines in all cases (Section 4).
- Use of:
  - laboratory duplicates;
  - laboratory spikes;
  - surrogates; and
  - laboratory blanks

  by SGS Environmental. Analytical methods, spikes, recoveries, acceptance criteria, practical quantitation limits (presented as limits of reporting (LOR), laboratory controls, laboratory blanks, and laboratory duplicates are presented in full within Appendix E, with all measures undertaken considered appropriate. Laboratory quality assurance and quality control targets were achieved for all samples and analyses with the following exceptions:
  - Surrogate recovery of δ-14-p-terphenyl as part of carbamate analysis was 106%. SGS was contacted on 7 July 2023 regarding the proper interpretation of this result, with the conclusion being that with 100% being appropriate recovery for this analyte, the classification of 106% as an exceedance was incorrect.

Based on this information, the laboratory analyses conducted on the samples collected were considered accurate and precise.

Section A 1.5.2 in Appendix A outlines the basis for establishing the number and type of replicates to be collected for the purposes of this report, with one sample to be collected in triplicate. Sample 1 0.10–0.25 was collected in triplicate, with samples QC1 and QC2 the replicate samples. An additional sample, Sample 1 0.3–0.4, was collected in duplicate, with sample QC3 the replicate sample. Replicate samples were collected through partitioning equal volumes of soil into replicate jars from each depth, to minimise the influence of chemical

fractionating with depth, as is known to occur. The rate of replicate sampling attained was also considered appropriate to assess the quality of field and laboratory works undertaken for this report.

Analytical results from replicate samples was used to assess the cross contamination of samples in the field and to assess the laboratory analyses as precise and accurate.

The relative percentage difference in the concentration of all analytes in replicate samples was below the 30% guideline outlined in the ASC NEPM, with the exception of chromium, lead, nickel, and zinc concentrations (Table C2, Appendix C). The 30% guideline was exceeded by:

- 52% for lead in one instance (Sample 1 0.3–0.4 & QC3);
- by 4% and 42% for chromium (Sample 1 0.10–0.25 & QC1; and Sample 1 0.3–0.4 & QC3 respectively);
- by 70% for nickel in one instance (Sample 1 0.3–0.4 & QC3); and
- by 37% for zinc in one instance (Sample 1 0.3–0.4 & QC3).

These differences are considered to minor and a result of both sample heterogeneity and the low concentrations of these analytes in soils, as no problems with analytical accuracy and precision were noted by the laboratory.

Concentrations of all other contaminants of potential concern were below the laboratory limit of reporting in all replicates, with relative percentage differences between replicates therefore not able to be calculated for these analytes. Based on this information, the analyses by the laboratory for the purposes of this assessment is considered to be sufficiently accurate and precise for the purposes of this report.

6.2 Final conceptual site model

As stated in Section 1, under Schedule B1 (and others) of the ASC NEPM, potential risks associated with site contamination are constrained based on whether there are sources of contamination, receptors of this contamination, and if exposure and/or transport pathways between these sources and receptors are present or could be present. No sources of contamination were found to occur at the Site (Appendix C, Table C1). Based on this, no transport and exposure pathways between contamination sources and receptors of contamination occur at the Site. Full laboratory reports outlining results are presented in Appendix F.

6.3 Risk assessment and site suitability

Chemicals of concern at the Site were below the adopted assessment criteria in all cases (Appendix C, Table C1). No indications of contamination occurred at the Site. This, together with the adherence of all aspects of this limited detailed site investigation with the required quality assurance and quality control measures (Sections 6.1.1 and 6.1.2) is considered to mean that chemicals of concern do not present an unacceptable risk

to human health and environmental receptors at the Site. The site is suitable for its proposed residential and environmental use, with no remediation necessary at the Site to make it suitable for these uses.

7. Compliance

The sampling and assessment undertaken at the Site is considered to have complied with the regulatory requirements set out in Section 5 and Appendix A as follows.

- An assessment of risk to human health and the environment from contaminants of concern at the Site is presented in Section 6.3. Based on this, the data quality objective "*state the problem*" was met.
- The goal of the study is addressed in Section 1 of this report, with the data quality objective "*identify the goal of the study*" therefore met.
- All information inputs outlined in the data quality objective "*identify the information inputs*" (e.g., site history, site interviews) were used to assess contamination at the Site.
- The Site was assessed within the boundaries, depths, and time frames stipulated in Appendix A, Section A.1.4 "*Identify the boundaries of the study*". This is with the exception of sample depths, which exceeded the stated depths in one instance, with this being the first location sampled. This was due to a lack of soil horizon development at this location, and the need to confirm an appropriate depth for identification of the B horizon was reached, if present.
- The analytical approach data quality objectives outlined in detail in Appendix A and presented as the Sampling and analysis quality plan in Section 5 were all achieved as follows:
    - Ten locations were sampled to a depth of 0.3 m bgs or the B horizon, whichever occurred first. The DQO for the site was ten sample locations. Based on this, the analytical approach data quality objective for sample location numbers at the site were met.
    - Of the ten locations sampled, three were located in soils mapped as Slight Hill and seven soils mapped as Morass soils. Based on this, the analytical approach data quality objective for soil representativeness at the site were met.
    - Samples were collected from both the A horizon and B horizon at all locations. Based on this, the analytical approach data quality objective for soil representativeness at the site were met.
    - Samples were collected from the sample grid prepared for the Site (Figure 2). Based on this, the analytical approach data quality objective for sample representativeness at the Site were met.
    - The collection of background samples was deemed unnecessary for the purposes of this limited detailed site investigation.
    - No instruments were used in the field for the purposes of this limited detailed site investigation
- Duplicate samples were collected at a rate of one in 10 samples, and triplicate samples were collected at a rate of one in 20 samples. Based on this, the analytical approach data quality objective for replicates at the Site were met.
- A rinsate blank was collected from rinsate water run off both the inside and outside the blade of the hand auger used to excavate samples from the Site. Based on this, the analytical approach data quality objective for replicates at the site were met.
- Data representativeness was assessed through review of field work, and laboratory quality control and quality assurance measures in Sections 6.1.1 and 6.1.2. These sections indicate the data collected for the purposes of this report were representative of site conditions. It is considered unlikely an incorrect decision regarding the Site's suitability for its proposed use and its risk to human health and the environment has been made (see Appendix A, Section A.1.6 for further details). This limited detailed site investigation is considered to have met performance criteria.

- Collection of samples occurred through the use of a hand auger, as stipulated in data quality objective A.1.7, "*Optimise the design for obtaining data*". Geotagged photographs of each location were also collected and a tape measure was also used. This information indicates the data quality objective A.1.7 was met.
- The information in this report was compared to Table A.2, in Appendix A, which outlined the data quality indicators specified in NSW EPA's (2020) *"Consultants reporting on contaminated land".* All data quality indicators met specifications.

Based on the information in this section, the information collected for the purposes of this limited detailed site investigation was sufficiently complete, comparable, representative, accurate, and precise to make reliable decisions with regards to risk and suitability of the site for its proposed use in relation to chemical contamination.

No instances of non-compliance are considered to have occurred in relation to regulatory requirements relating to the Site.

8. Information gaps and limitations

The findings of this report are subject to the following information gaps and limitations:

- As this is a limited detailed site investigation, only a limited number of samples were collected.
- Soils are inherently variable. The concentration of chemicals within the soil can vary by several orders of magnitude within very small (i.e., less than one metre) distances across a landscape, with depth, between seasons, and from year to year. The chemical analyses of soil samples is a highly valuable and necessary indication of soil properties, but should be nonetheless viewed as indicative of soil conditions at a site at a given point in time, rather than absolute values. Correct implementation of the sampling regime further determines the reliability and utility of soil chemical analyses.
- Findings from the site inspection are based on what was observed on the day. Key areas throughout the Site were visited, but not every area of the Site could practicably be observed. This is considered to have low impact on the findings of this investigation, as aerial photographs and Google Earth imagery were used to corroborate the findings of the site inspection.
- No asbestos assessment relating to structures at the Site was undertaken as part of Site works.

9. Conclusions and recommendations

Murrang Earth Sciences was engaged by GroupOne to a limited detailed site investigation of 41 King Street (Lot 3 DP1118635), Tarago, NSW (the Site). This was due to the findings of Murrang Earth Sciences preliminary site investigation finding that two potential contamination sources occurred at the Site, with these being dust, cut, fill from railway ballast or nearby mine(s); and pesticide use as a result of agricultural activities. Ten locations were sampled at the Site as part of this limited detailed site investigation. Samples were collected from the A horizon (i.e., a depth of approximately 0.1 to 0.1 m below ground surface) and from the top of the B horizon (i.e., a depth of approximately 0.1 below ground surface and below) at each location, due to the sources of contamination at the Site being from the ground surface.

Chemicals of concern at the Site were below the adopted assessment criteria in all cases. No indications of contamination occurred at the Site. Based on this, chemicals of concern are considered to not present an unacceptable risk to human health and environmental receptors at the Site. The site is suitable for its proposed residential and environmental use, with no remediation necessary at the Site to make it suitable for these uses.

This report was reviewed by Dr Chris Gunton, a Certified Environmental Practitioner General (1044) and Site Contamination Specialist (SC41045) within the Site Contamination Practitioners Australia Scheme. A copy of this review is presented in Appendix G.

10. References

1. Jasonsmith, J.F. (2023). *Preliminary site investigation, Lot 3 DP1118635, 41 King Street, Tarago NSW*. Dated 2 June 2023. Murrang Earth Sciences, Canberra.
2. National Environment Protection Council. (1999). *National Environment Protection (Assessment of Site Contamination) Measure 1999: Guideline on Site Characterisation*. Commonwealth of Australia, Canberra.
3. New South Wales Environment Protection Authority (2020) *Consultants reporting on contaminated sites.* NSW EPA, Sydney.
4. Australian Bureau of Meteorology (2016). *Maps of average conditions.* Accessed on 24 May 2023 at: <http://www.bom.gov.au/climate/averages/maps.shtml>
5. New South Wales Environment Protection Authority (2022) *Sampling Design Part 1 – application: contaminated land guidelines*. NSW EPA, Sydney.
6. Goulburn Mulwaree Regional Council (2021). *Draft Tarago Village Strategy: Goulburn Mulwaree Regional Council – October 2021— Draft V.3.* Accessed on 18 May 2023 at: <https://www.goulburn.nsw.gov.au/files/sharedassets/public/strategic-planning/draft-tarago-village-strategy-v.3-public-exhibition-october-2021.pdf>

Appendix A.
Data quality objectives and data quality indicators

A.1. Data quality objectives

Data quality objectives are the steps to be undertaken that will ensure the information collected for the purposes of the detailed site investigation will allow for the correct decisions to be made. The quality control objectives presented in Table 2(b) of NSW EPA's *"Consultants reporting on contaminated land"* were adopted for the purposes of this report (Table A.1).

Table A.1. Data quality objectives adopted from NSW EPA's "*Consultants reporting on contaminated land"*

Data quality objectives
Step 1: State the problem
Step 2: Identify the decision/goal of the study
Step 3: Identify the information inputs
Step 4: Define the boundaries of the study
Step 5: Develop the analytical approach
Step 6: Specify performance or acceptance criteria
Step 7: Develop the plan for obtaining data
Are the data quality objectives linked to the conceptual site model, and have they been updated with the conceptual site model?

A.1.1 State the problem

Step One of the DQO process identifies the problem for which data needs to be collected. In the case of this detailed site investigation, the problem is:

- The risk to human health and the environment from contaminants at the concern needs to be substantiated using data

A.1.2. Identify the goal of the study

Decisions that need to be made with regards to contamination are made in Step Two of the DQO process. The aims of this assessment are to assess whether soil contamination occurs in association with sources of

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contamination associated with the Site and whether the Site is suitable for its proposed use. Based on this, the following decisions need to be made:

1. Do chemicals of concern present an unacceptable risk to human health receptors at the Site
2. Do chemicals of concern present an unacceptable risk to environmental receptors at the Site
3. Is the site suitable for its proposed residential use
4. Is the site suitable for its environmental use
5. Does remediation need to occur for the site to be made suitable for its proposed residential use

A.1.3. Identify the information inputs

The information required to make the decisions outlined in Step Two, above, is identified in Step Three of the DQO Process. The information requirements were constrained to the following:

- Site observations
- Site identification
- Site history
- Present site condition
- Current and proposed land use
- Surrounding land-use
- Potential contamination sources
- Sensitive receptors
- Contaminant transport
- Contaminant exposure
- Concentrations of chemicals of concern in soils at the Site
- Conceptual site models
- Relevant legislation, including but not limited to regulations and guidelines
- Chain-of-custody
- Sample logs
-

A.1.4. Identify the boundaries of the study

Step Four of the DQO process requires the extent of the area to which the investigation applies to be outlined, as well as any time requirements. The boundaries of this investigation are as follows:

- Area of environmental concern (AEC) 1, with the boundaries of this AEC in turn being the same as those for 41 King Street (Lot 3 DP1118635), Tarago, New South Wales.
- The date of sampling (27 June 2023).
- 0.3 m below ground surface—that is surface soils acting as a receptor to the contaminants of concern at the Site

A.1.5. Develop the analytical approach

The approach to assessing the data to be collected as part of an investigation is outlined in Step Five of the DQO process. Data was to be collected for samples, replicates, and for a rinsate blank. Only analysis relating to the results delivered by Murrang Earth Sciences were to be assessed for the purposes of this report, with the selected laboratory, SGS Environmental, responsible for constraining the analytical approach for laboratory analyses (i.e., acceptable limits for matrix spikes, analyte recoveries, etc.), in accordance with their NATA accreditation. The data requirements for step 5 of the DQO process is outlined in the following sections.

A.1.5.1 Samples

Analysis of the risk presented to human health and the environment by contaminants at the Site will occur through comparison of the concentrations of these chemicals in soils at the Site to the ASC NEPM's HIL A and EIL criteria (Section 2.1). If contaminant concentrations exceed these criteria, then an unacceptable risk to human health and/or environmental receptors from contaminants of concern in soils is considered to occur at the Site. Further investigation will be considered necessary.

Surface soils are the key receptor of contamination identified within Murrang Earth Sciences preliminary site investigation written for the Site, where deposition, placement, or transport of contaminants to the Site are the main transport pathways. The highest concentration of potential contaminants of concern was therefore expected to be close to or at the soil surface. Decreasing impact is expected to occur with increasing depth. Impacted surface soils also present the most likely contaminant exposure pathway to receptors. Based on this, samples from across AEC 1 (i.e., the Site) will be collected for the assessment of contaminants, with samples collected from the soil surface (i.e., up to 0.3 m). Soil samples were to be collected from the A horizon (approximately 0 to 0.1 m below ground surface) and the top of the B horizon (approximately below 0.1 metres below ground surface) separately, due to the different chemical properties of these soil strata. Samples were to be collected by Murrang Earth Sciences employee, Julia Jasonsmith.

New South Wales Environment Protection Authority's (2022) *"Sampling design guidelines – part 1: contaminated lands guidlelines"* (the NSW EPA guidelines) state that samples should be collected from at least 21 locations across a 1.0 ha area, with the Site being 1.0. Only limited evidence of potential contaminant sources was presented within Murrang Earth Sciences' preliminary site investigation of the Site, however, with only a limited number of samples at the Site justified. On this basis, samples were to be collected from 10 locations across the Site.

Two soil types are considered to occur at the Site. These are Morass and Slight Hill. The boundary between these soil types runs in a north-east–south-west direction in the western end of the Site, with approximately 70% of the Soils at the Site being Morass (Figure A.1.). Seven (i.e., 70%) of the soil samples that were to be collected from the Site were to be collected from the Morass soils that make up the greater portion of soils at the Site, with three samples to be collected from the Slight Hill Soils.

Figure A.1. Soil types at the Site, where 8827si indicates Slight Hill soils and 8827ms indicates Morass soils

The NSW EPA guidelines state:

> *'Systematic sampling is statistically unbiased as long as the coordinates of the first sampling location are determined randomly... In the assessment of site contamination, systematic sampling is usually done over a grid, although transects may be appropriate when lineal features are being assessed, such as the validation of former pipeline trenches. Gilbert 1987 notes that uniform coverage in many cases yields more accurate critical parameters of a contaminant distribution, such as the mean. NEPC 2013, B4 states that ''systematic and grid sampling is used to search for hotspots and to infer means, percentiles or other parameters'' '*

Based on this, a site plan that included a grid was established for the Site (Figure A.2.). Each grid square was 55 m wide in both north-south and east-west directions. The '*RANDBETWEEN*' function in Microsoft Excel was used to provide random north-south and east-west grid numbers on this grid, with a new random number generated when the original number occurred outside the grid coordinates due to the irregular polygonal shape of the Site. An example of a grid number outside the grid coordinates, is for example, 2 (north-south), 6 (north-south). The sampling grid established to guide the location of the 10 samples to be collected from the Site is presented in Figure A.2., with samples to be collected from the centre of each grid square.

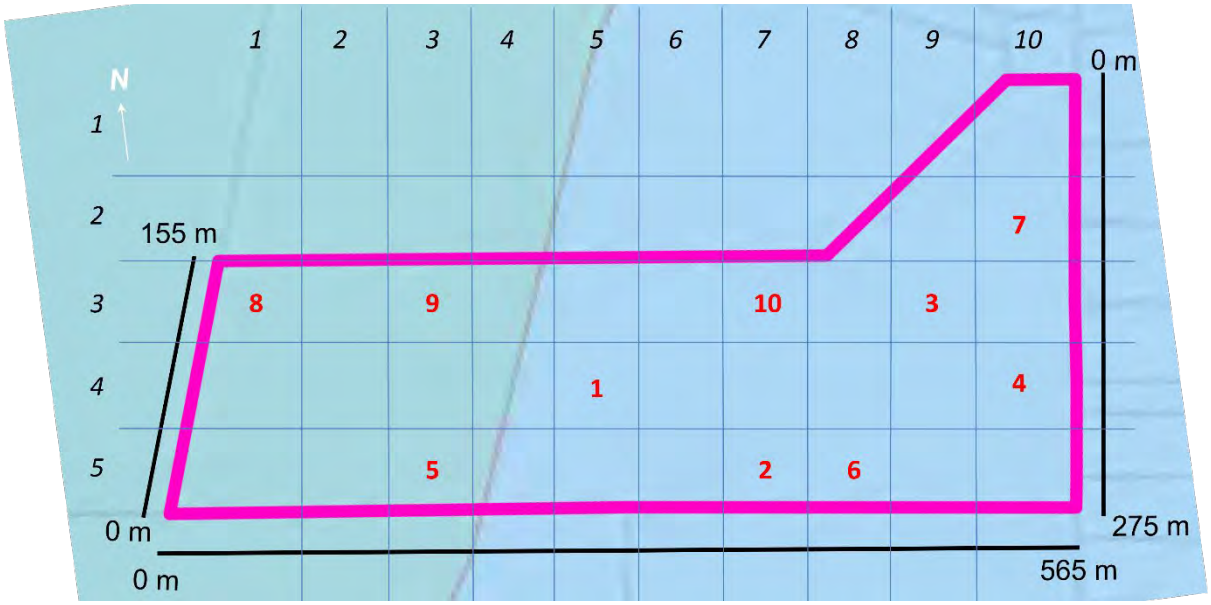

Figure A.2. Location of samples to be collected from the Site on a systematic basis, whereby a random number generator within Microsoft Excel was used to generate sample locations within this grid. The background to the image presents the two soil types, Morass and Slight Hill, known to occur at the Site and from which a proportionate number of samples must be collected

A.1.5.2 Replicates

The influence of sample heterogeneity and the quality of laboratory analyses was to be reviewed through analysis of replicate samples. The ASC NEPM[4] states "*the rate of blind replicates and split samples should be adjusted to an appropriate level to ensure sufficient quality assurance*" to ascertain the representativeness and integrity of samples collected in the field and of laboratory analyses. One sample was to be collected in triplicate (i.e., two blind replicates of a primary sample) for the purposes of this report. Sample replication is to occur through splitting the collected soil equally between three jars (i.e., equal proportions of each soil layer are to occur in each replicate sample).

Relative percentage differences between contaminant concentrations in replicate samples was to be less than 30%. If relative percentage differences is greater than 30% then:

- sample heterogeneity must be considered a factor influencing contaminant concentrations; or
- the accuracy and precision of laboratory analysis needs to be reviewed.

A.1.5.3. Rinsate blanks

The impact of cross-contamination on samples was to be assessed through analysis of a rinsate blank, collected off the hand-auger to be used at the Site and to be collected between sampling at different locations within the

Site. The acceptable concentration of contaminants of concern in the rinsate blank sample was to be below the laboratory limit of reporting. If contaminant concentrations are greater than the laboratory limit of reporting in the rinsate blank, cross-contamination of samples is considered to have occurred and the influence of this on sample results must be discussed in relation to sample results.

A.1.6. Specify performance or acceptance criteria

Decision errors are incorrect decisions caused by using data that is not representative of site conditions due to sampling or analytical error. As a result, a decision may be made that site clean-up is not needed when it is, or vice versa.

This detailed site investigation is considered to be Tier One of a three-tier assessment process. The risk of harm to human health and the environment was established using the ASC NEPM's HIL A and EIL guidelines as a conservative measure of potential risk, where an unacceptable risk of harm is found to occur at the Site when HIL A or HSL A criteria are exceeded. In the event criteria were exceeded, a Tier Two risk assessment would take place, where more information would be collected to constrain the risk more accurately and precisely.

The main impact of incorrectly deciding remedial action is required at a Site as a result of incorrectly concluding a site is not suitable for its proposed use is financial. In such a case, costs incurred through remediation activities would be unnecessarily borne by the Site owner.

The impact of deciding that action is not required where it is (i.e., contamination at the Site is not properly identified), will be potential harm to human health and/or the environment.

A.1.7. Optimise the design for obtaining data

The seventh step of the DQO process involves identifying the most resource-effective sampling and analysis design for generating the data that can satisfy the DQOs. With sampling depths of up to 0.3 metres required, hand-augering is considered sufficient to reach the required sampling depths. The use of tape measures and geotagged photographs was also considered to be necessary, in order to accurately identify the location of samples and delineate contamination at the Site.

Neither portable photoionization detectors (PIDs) nor lethal explosivity limit meters (LELs) were to be used for the purposes of this limited detailed site investigation. This is because PIDs and LELs are designed for qualitative assessment of BTEX and volatile hydrocarbons, with longer carbon chain hydrocarbons instead of key concern for this report; and due to quantitative rather than qualitative measures of chemicals of concern being used to

constrain chemical concentrations. Olfactory and visual signs of contamination will be recorded for soils assessed within this report.

A.2. Data quality indicators

Data quality indicators are quantitative measures of the precision, accuracy, representativeness, completeness and comparability of data. The data quality indicators presented in NSW EPA (2020) were adopted for the purposes of this report, and are presented in Table B.2, below.

Table B.2. Data quality indicators adopted for the purposes of this report from NSW EPA (2020)[3]

Required information	Completeness	Comparability	Representativeness	Precision	Accuracy
Details of sampling team	X	X			
Reference to sampling plan/method, including any deviations from it – sampling and analysis quality plan	X				
Any information that could be required to evaluate measurement uncertainty for subsequent testing (analysis)				X	X
Decontamination procedures carried out between sampling events			X	X	X
Logs for each sample collected, including date, time, location (with GPS coordinates if possible), sampler, duplicate samples, chemical analyses to be performed, site observations and weather/environmental (i.e. surroundings) conditions. Include any diagrams, maps, photos		X	X		
Chain of custody fully identifying—for each sample—the sampler, nature of the sample, collection date, analyses to be performed, sample preservation method, departure time from the site and dispatch courier(s) (where applicable)	X	X			
Field quality assurance/quality control results (e.g. field blank, rinsate blank, trip blank, laboratory prepared trip spike)				X	X
Sample splitting techniques—subsampling, containers/preservation (ensure unique ID for subsequent samples provided)			X		
Statement of duplicate frequency			X	X	

Required information	Completeness	Comparability	Representativeness	Precision	Accuracy
Background sample results	X	X			
Field instrument calibrations (when used)				X	X
Sampling devices and equipment	X	X			
A copy of signed chain-of-custody forms acknowledging receipt date, time and laboratory analysis has temperature and identity of samples included in shipments	X	X			
Record of holding times and a comparison with method specifications	X	X			
Analytical methods used, including any deviations	X	X			
Laboratory accreditation for analytical methods used, also noting any methods used which are not covered by accreditation	X				X
Laboratory performance for the analytical method using interlaboratory duplicates		X			X
Surrogate spikes used throughout the full method process, or only in parts. Results are corrected for recovery.	X	X			
A list of what spikes and surrogates were run with their recoveries and acceptance criteria (tabulate)		X			X

Required information	Completeness	Comparability	Representativeness	Precision	Accuracy
Practical quantification limits (PQL)	X	X			
Reference laboratory control sample (LCS) and check results	X				
Laboratory duplicate results (tabulate)	X				X
Laboratory blank results (tabulate)	X				X
Results are within control chart limits	X				
Evaluation of all quality assurance/control information listed above against the stated data quality objectives, including a quality assurance/control data evaluation	X	X	X	X	X

Appendix B.
Sample receipt notifications and chain-of-custody documentation

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CHAIN OF CUSTODY & ANALYSIS REQUEST

QUOTE #: Irfan Sayeed 2/6/2023

LAB CONTACT

Matthew.tyler@sgs.com
0285940400

16/33 Maddox Street
Alexandria, NSW 2015
Australia

CLIENT DETAILS

Company: Murrang Earth Sciences
Contact: Julia Jasonsmith
Email for results: julia.jasonsmith@murrang.com.au
Contact number: 0406621214
Contact mobile: 0406621214

PROJECT DETAILS

Client Reference: MES2167
Turnaround Required: STD

Client Sample ID	Lab Sample ID	MATRIX	CONTAINERS	DATE	TIME	Carbamates	Synthetic pyrethroids	Triazine herbicides	SVOC Scheme 8270	VOC Scheme 8260	8 Metals (As, Cd, Cu, Cr, Hg, Ni, Pb, Zn)	Comments
Sample 1 ~~(surface)~~ 0.0-0.2	1	Soil	Glass jars	4/07/2023	N/A							SGS EHS Sydney COC SE249904
Sample 1 0.3-0.4	2											
Sample 2 ~~(surface)~~ 0.2-0.3	3											
Sample 2 0.1-0.2	4											
Sample 3 ~~(surface)~~ 0.1-0.2	5											
Sample 3 0.2-0.3	6											
Sample 4 ~~(surface)~~ 0.0-0.1	7											
Sample 4 0.2-0.3	8											
Sample 5 ~~(surface)~~ 0.1-0.2	9											
Sample 5 0.3-0.4	10											
QC1	11											
QC2	12											
Rinsate	13	H2O										

Relinquished By: Julia Jasonsmith	Date/Time: 27/06/23 1415	Received By:	Date/Time: 28/6/23 11:50
Relinquished By:	Date/Time:	Received By:	Date/Time:

LABORATORY SECTION

Samples Intact: Yes/ No	**Temperature:** 11.4 -ICE	**Sample Cooler Sealed:** Yes / No	
Sample Date:	**Comments:**		

CHAIN OF CUSTODY & ANALYSIS REQUEST

QUOTE #: Irfan Sayeed 2/6/2023

LAB CONTACT

Matthew.tyler@sgs.com
0285940400

16/33 Maddox Street
Alexandria, NSW 2015
Australia

CLIENT DETAILS

Company: Murrang Earth Sciences
Contact: Julia Jasonsmith
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Contact number: 0406621214
Contact mobile: 0406621214

PROJECT DETAILS

Client Reference: MES2167
Turnaround Required: STD

Client Sample ID	Lab Sample ID	MATRIX	CONTAINERS	DATE	TIME	Carbamates	Synthetic pyrethroids	Triazine herbicides	SVOC 8270	VOC 8260	8 Metals (As, Cd, Cu, Cr, Hg, Ni, Pb, Zn)										Comments
Sample 6 ~~(surface)~~ 0.1-0.2	14	Soil	Glass jars	4/07/2023	N/A	✓	✓	✓	✓	✓	✓										
Sample 6 0.2-0.3	15										✓										
Sample 7 ~~(surface)~~ 0.1-0.2	16					✓	✓	✓			✓										
Sample 7 0.25-0.35	17										✓										
Sample 8 ~~(surface)~~ 0.1-0.2	18					✓	✓	✓	✓	✓	✓										
Sample 8 0.3-0.4	19										✓										
Sample 9 ~~(surface)~~ 0.1-0.2	20					✓	✓	✓			✓										
Sample 9 0.25-0.3	21										✓										
~~Sample~~ 10 ~~(surface)~~ 0.1-0.2 (S.Jc)	22					✓	✓	✓	✓	✓	✓										
~~Sample~~ 10 0.3-0.35 (S.Jc)	23										✓										
QC3	24																				

Relinquished By: Julia Jasonsmith	Date/Time: 27/06/23 1415pm	Received By:	Date/Time: 28/6 @ 11.50
Relinquished By:	Date/Time:	Received By:	Date/Time:

LABORATORY SECTION

Samples Intact: Yes/ No	**Temperature:**	**Sample Cooler Sealed: Yes / No**	
Sample Date:	**Comments:**		

Thanks Irfan,

the list is:

8 Metals
OC/OP pesticides
Carbamates
Pyrethroids
Triazine herbicies

2,4,5 T
2,4 D
MCPA
MCPB
Mecoprop
Picloram*

Surely I am not the only one asking for such analyses -- these are just the ASC NEPM pesticides... ? So interesting if I am.

Jules

Dr Julia Jasonsmith

Director and Environmental Chemist
Murrang Earth Sciences

Honorary Lecturer
Fenner School of Environment and Society
Australian National University

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Ngunnawal Country, GPO Box 2310, CANBERRA 2601

Murrang is the Wiradjuri word for mud. Murrang Earth Sciences is grateful to the Wiradjuri people for their language. Our offices are proudly located on Ngunnawal country in Canberra. We acknowledge the Traditional Owners of the land on which we work, and their knowledge, culture, and spiritual connection to Country.

Cc: Luong, Thi Song Van (Sydney) <ThiSongVan.Luong@sgs.com>
Subject: RE: [EXTERNAL] Re: SE249904 MES2167

Thanks Julia.
Will add it for analysis.
Do you need Phenoxy Acid Herbicides done for these samples?
please advise as soon as possible.
Thank You.

Regards,

Emily Yin
Environment, Health & Safety
Sample Receipt

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

Phone: +61 (0)2 8594 0400
Fax: +61 (0)2 8594 0499
E-mail: au.samplereceipt.sydney@sgs.com

From: Julia Jasonsmith <julia.jasonsmith@murrang.com.au>
Sent: Wednesday, 28 June 2023 3:54 PM
To: Yin, Emily (Sydney) <Emily.Yin@sgs.com>
Cc: Luong, Thi Song Van (Sydney) <ThiSongVan.Luong@sgs.com>
Subject: [EXTERNAL] Re: SE249904 MES2167

#24

Yes please, thanks for asking Emily. For 8 metals please.

Jules

Dr Julia Jasonsmith

Director and Environmental Chemist
Murrang Earth Sciences

Honorary Lecturer
Fenner School of Environment and Society
Australian National University

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SAMPLE RECEIPT ADVICE

SE249904

CLIENT DETAILS

Contact	Julia Jasonsmith
Client	MURRANG EARTH SCIENCES PTY LTD
Address	GPO BOX 2310 CANBERRA ACT 2601
Telephone	0406 621 214
Facsimile	(Not specified)
Email	julia.jasonsmith@murrang.com.au
Project	**MES2167**
Order Number	**MES2167**
Samples	24

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Wed 28/6/2023
Report Due	Wed 5/7/2023
SGS Reference	**SE249904**

SUBMISSION DETAILS

This is to confirm that 24 samples were received on Wednesday 28/6/2023. Results are expected to be ready by COB Wednesday 5/7/2023. Please quote SGS reference SE249904 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	23 Soil, 1 Water	Type of documentation received	COC
Date documentation received	28/6/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	11.4°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

COMMENTS

Phenoxy Acid Herbicides subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420.

SAMPLE RECEIPT ADVICE

SE249904

CLIENT DETAILS

Client MURRANG EARTH SCIENCES PTY LTD

Project MES2167

SUMMARY OF ANALYSIS

No.	Sample ID	Carbamates in Soil	OC Pesticides in Soil	OP Pesticides in Soil	Pesticides / Herbicides in Soils by LC-MS/MS	Synthetic Pyrethroids in Soil	Total Recoverable Elements in Soil/Waste	Triazines in Soil	VOC's in Soil
001	Sample 1 0.1-0.25	3	30	14	19	8	7	10	79
002	Sample 1 0.3-0.4	-	-	-	-	-	7	-	-
003	Sample 2 0.1-0.25	3	-	-	-	8	7	10	-
004	Sample 2 0.1-0.2	-	-	-	-	-	7	-	-
005	Sample 3 0.1-0.2	3	30	14	19	8	7	10	79
006	Sample 3 0.2-0.3	-	-	-	-	-	7	-	-
007	Sample 4 0.1-0.15	3	-	-	-	8	7	10	-
008	Sample 4 0.2-0.3	-	-	-	-	-	7	-	-
009	Sample 5 0.1-0.4	3	-	-	-	8	7	10	-
010	Sample 5 0.3-0.4	-	-	-	-	-	7	-	-
011	QC1	3	-	-	-	-	7	10	-
012	QC2	3	-	-	-	-	7	10	-
014	Sample 6 0.1-0.2	3	30	14	19	8	7	10	79
015	Sample 6 0.2-0.3	-	-	-	-	-	7	-	-
016	Sample 7 0.1-0.2	3	-	-	-	8	7	10	-
017	Sample 7 0.25-0.35	-	-	-	-	-	7	-	-
018	Sample 8 0.1-0.2	3	30	14	19	8	7	10	79
019	Sample 8 0.3-0.4	-	-	-	-	-	7	-	-
020	Sample 9 0.1-0.2	3	-	-	-	8	7	10	-
021	Sample 9 0.25-0.3	-	-	-	-	-	7	-	-
022	Sample 10 0.1-0.2	3	30	14	19	8	7	10	79
023	Sample 10 0.3-0.35	-	-	-	-	-	7	-	-
024	QC3	-	-	-	-	-	7	-	-

CONTINUED OVERLEAF

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

SAMPLE RECEIPT ADVICE

SE249904

CLIENT DETAILS

Client MURRANG EARTH SCIENCES PTY LTD

Project MES2167

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	Mercury in Soil	Moisture Content	Trace Metals (Dissolved) in Water by ICPMS
001	Sample 1 0.1-0.25	-	1	1	-
002	Sample 1 0.3-0.4	-	1	1	-
003	Sample 2 0.1-0.25	-	1	1	-
004	Sample 2 0.1-0.2	-	1	1	-
005	Sample 3 0.1-0.2	-	1	1	-
006	Sample 3 0.2-0.3	-	1	1	-
007	Sample 4 0.1-0.15	-	1	1	-
008	Sample 4 0.2-0.3	-	1	1	-
009	Sample 5 0.1-0.4	-	1	1	-
010	Sample 5 0.3-0.4	-	1	1	-
011	QC1	-	1	1	-
012	QC2	-	1	1	-
013	Rinsate	1	-	-	7
014	Sample 6 0.1-0.2	-	1	1	-
015	Sample 6 0.2-0.3	-	1	1	-
016	Sample 7 0.1-0.2	-	1	1	-
017	Sample 7 0.25-0.35	-	1	1	-
018	Sample 8 0.1-0.2	-	1	1	-
019	Sample 8 0.3-0.4	-	1	1	-
020	Sample 9 0.1-0.2	-	1	1	-
021	Sample 9 0.25-0.3	-	1	1	-
022	Sample 10 0.1-0.2	-	1	1	-
023	Sample 10 0.3-0.35	-	1	1	-
024	QC3	-	1	1	-

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

Appendix C.
Sample analytical results

02 6161 1762

contact@murrang.com.au

www.murrang.com.au
ABN 96 162 928 958

Guideline	Eight metals	
	Arsenic (mg/kg)	Cadmium (mg/kg)
ASC NEPM HIL A	100	20
ASC NEPM EIL (aged in urban soils)	50	N/A
Laboratory LOR	1.0	0.3

Sample	Sample date	Comment	Sample depth (m bgs)	Eight metals	
				Arsenic (mg/kg)	Cadmium (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	1	<0.3
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	1	<0.3
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	1	<0.3
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	<1	<0.3
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	3	<0.3
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	7	<0.3
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	9	<0.3
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	1	<0.3
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	2	<0.3
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	1	<0.3
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	1	<0.3
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	5	<0.3
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	4	<0.3
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	2	<0.3
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	2	<0.3
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	2	<0.3
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	2	<0.3
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	1	<0.3
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	1	<0.3
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	5	<0.3
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	10	<0.3
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	4	<0.3
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	4	<0.3
Rinsate	27/06/2023	Rinsate blank	N/A	<1	<0.1

Guideline	Eight metals				
	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
ASC NEPM HIL A	100[a]	6000	300	400	7400
ASC NEPM EIL (aged in urban soils)	N/A	N/A	270	N/A	N/A
Laboratory LOR	0.5	0.5	1.0	0.5	2.0

Sample	Sample date	Comment	Sample depth (m bgs)	Eight metals				
				Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	3.7	4	10	0.6	17
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	5.2	3.9	9	0.7	14
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	4.1	4.2	10	0.7	17
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	5.2	0.9	5	0.5	3
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	11	<0.5	12	1.5	6
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	14	5.9	16	4.7	22
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	21	4.5	15	8.6	16
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	7	3.5	10	1	13
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	7.5	1.3	8	1	6
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	8.9	3.7	11	0.9	18
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	5.8	3.2	9	0.8	9
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	4.8	6.1	15	1.3	19
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	4.5	1.3	8	0.9	3
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	9.3	1.2	6	1.2	4
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	7.6	2.9	11	0.7	11
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	8.8	3.6	12	1.3	13
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	14	1.8	10	2	5
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	1.8	6.9	12	0.5	18
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	2.3	5.2	8	<0.5	7
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	12	5.6	17	1.4	22
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	18	3.9	14	3.5	16
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	8.8	4	11	1.2	20
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	9	2	9	1	4
Rinsate	27/06/2023	Rinsate blank	N/A	<1	<1	<1	<1	<5

Guideline		Organochlorine pesticides			
	Mercury (mg/kg)	p,p'-DDD (mg/kg)	o,p'-DDD (mg/kg)	p,p'-DDE (mg/kg)	o,p'-DDE (mg/kg)
ASC NEPM HIL A	10[b]	N/A	N/A	N/A	N/A
ASC NEPM EIL (aged in urban soils)	N/A	N/A	N/A	N/A	N/A
Laboratory LOR	0.05	0.1	0.1	0.1	0.1
	0.05				

Sample	Sample date	Comment	Sample depth (m bgs)		Organochlorine pesticides			
				Mercury (mg/kg)	p,p'-DDD (mg/kg)	o,p'-DDD (mg/kg)	p,p'-DDE (mg/kg)	o,p'-DDE (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	<0.05	<0.1	<0.1	<0.1	<0.1
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	<0.05	N.A.	N.A.	N.A.	N.A.
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	<0.05	N.A.	N.A.	N.A.	N.A.
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	<0.05	N.A.	N.A.	N.A.	N.A.
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	<0.05	N.A.	N.A.	N.A.	N.A.
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	<0.05	N.A.	N.A.	N.A.	N.A.
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	<0.05	N.A.	N.A.	N.A.	N.A.
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	<0.05	<0.1	<0.1	<0.1	<0.1
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	<0.05	N.A.	N.A.	N.A.	N.A.
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	<0.05	N.A.	N.A.	N.A.	N.A.
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	<0.05	N.A.	N.A.	N.A.	N.A.
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	<0.05	N.A.	N.A.	N.A.	N.A.
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	0.12	N.A.	N.A.	N.A.	N.A.
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	<0.05	<0.1	<0.1	<0.1	<0.1
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	<0.05	N.A.	N.A.	N.A.	N.A.
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	<0.05	N.A.	N.A.	N.A.	N.A.
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	<0.05	N.A.	N.A.	N.A.	N.A.
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	<0.05	<0.1	<0.1	<0.1	<0.1
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	<0.05	N.A.	N.A.	N.A.	N.A.
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	<0.05	N.A.	N.A.	N.A.	N.A.
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	<0.05	N.A.	N.A.	N.A.	N.A.
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	<0.05	<0.1	<0.1	<0.1	<0.1
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	<0.05	N.A.	N.A.	N.A.	N.A.
Rinsate	27/06/2023	Rinsate blank	N/A	<0.0001	N.A.	N.A.	N.A.	N.A.

Guideline	Organochlorine pesticides		
	p,p'-DDT (mg/kg)	o,p'-DDT (mg/kg)	DDT+DDE+ DDD (mg/kg)
ASC NEPM HIL A	N/A	N/A	240
ASC NEPM EIL (aged in urban soils)	180	180	N/A
Laboratory LOR	0.1	0.1	N/A

Sample	Sample date	Comment	Sample depth (m bgs)	Organochlorine pesticides		
				p,p'-DDT (mg/kg)	o,p'-DDT (mg/kg)	DDT+DDE+ DDD (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	<0.1	<0.1	N.A.
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	N.A.	N.A.	N.A.
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	N.A.	N.A.	N.A.
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	N.A.	N.A.	N.A.
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	N.A.	N.A.	N.A.
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	<0.1	<0.1	N.A.
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	N.A.	N.A.	N.A.
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	N.A.	N.A.	N.A.
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	N.A.	N.A.	N.A.
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	N.A.	N.A.	N.A.
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	N.A.	N.A.	N.A.
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	<0.1	<0.1	N.A.
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	N.A.	N.A.	N.A.
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	N.A.	N.A.	N.A.
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	N.A.	N.A.	N.A.
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	<0.1	<0.1	N.A.
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	N.A.	N.A.	N.A.
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	N.A.	N.A.	N.A.
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	N.A.	N.A.	N.A.
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	<0.1	<0.1	N.A.
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	N.A.	N.A.	N.A.
Rinsate	27/06/2023	Rinsate blank	N/A	N.A.	N.A.	N.A.

Guideline	Organochlorine pesticides					
	Aldrin (mg/kg)	Dieldrin (mg/kg)	Aldrin and dieldrin (mg/kg)	Chlordane (alpha) (mg/kg)	Chlordane (gamma) (mg/kg)	Chlordane (mg/kg)
ASC NEPM HIL A	N/A	N/A	6	50	50	50
ASC NEPM EIL (aged in urban soils)	N/A	N/A	N/A	N/A	N/A	N/A
Laboratory LOR	0.1	0.2	N/A	0.1	0.1	N/A

Sample	Sample date	Comment	Sample depth (m bgs)	Organochlorine pesticides					
				Aldrin (mg/kg)	Dieldrin (mg/kg)	Aldrin and dieldrin (mg/kg)	Chlordane (alpha) (mg/kg)	Chlordane (gamma) (mg/kg)	Chlordane (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	<0.1	<0.2	N.A.	<0.1	<0.1	N.A
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	<0.1	<0.2	N.A.	<0.1	<0.1	N.A
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	<0.1	<0.2	N.A.	<0.1	<0.1	N.A
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	<0.1	<0.2	N.A.	<0.1	<0.1	N.A
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	<0.1	<0.2	N.A.	<0.1	<0.1	N.A
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Rinsate	27/06/2023	Rinsate blank	N/A	N.A.	N.A.	N.A.	N.A.	N.A.	N.A

Guideline	Organochlorine pesticides				
	Alpha endosulfan (mg/kg)	Beta endosulfan (mg/kg)	Endosulfan sulfate (mg/kg)	Endosulfan (total) (mg/kg)	Endrin (mg/kg)
ASC NEPM HIL A	270	270	270	270	10
ASC NEPM EIL (aged in urban soils)	N/A	N/A	N/A	N/A	N/A
Laboratory LOR	0.2	0.2	0.1	N/A	0.2

Sample	Sample date	Comment	Sample depth (m bgs)	Organochlorine pesticides				
				Alpha endosulfan (mg/kg)	Beta endosulfan (mg/kg)	Endosulfan sulfate (mg/kg)	Endosulfan (total) (mg/kg)	Endrin (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	<0.2	<0.2	<0.1	N.A.	<0.2
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.	N.A.
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	<0.2	<0.2	<0.1	N.A.	<0.2
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	<0.2	<0.2	<0.1	N.A.	<0.2
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	<0.2	<0.2	<0.1	N.A.	<0.2
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	<0.2	<0.2	<0.1	N.A.	<0.2
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	N.A.	N.A.	N.A.	N.A.	N.A.
Rinsate	27/06/2023	Rinsate blank	N/A	N.A.	N.A.	N.A.	N.A.	N.A.

Guideline	Organochlorine pesticides				
	Heptachlor (mg/kg)	Lindane (mg/kg)	Delta BHC (mg/kg)	Beta BHC (mg/kg)	Nonachlor (mg/kg)
ASC NEPM HIL A	6	N/A	N/A	N/A	N/A
ASC NEPM EIL (aged in urban soils)	N/A	N/A	N/A	N/A	N/A
Laboratory LOR	0.1	0.1	0.1	0.1	0.1

Sample	Sample date	Comment	Sample depth (m bgs)	Organochlorine pesticides				
				Heptachlor (mg/kg)	Lindane (mg/kg)	Delta BHC (mg/kg)	Beta BHC (mg/kg)	Nonachlor (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	<0.1	<0.1	<0.1	<0.1	<0.1
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.	N.A.
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	<0.1	<0.1	<0.1	<0.1	<0.1
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	<0.1	<0.1	<0.1	<0.1	<0.1
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	<0.1	<0.1	<0.1	<0.1	<0.1
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	<0.1	<0.1	<0.1	<0.1	<0.1
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	N.A.	N.A.	N.A.	N.A.	N.A.
Rinsate	27/06/2023	Rinsate blank	N/A	N.A.	N.A.	N.A.	N.A.	N.A.

Guideline	Organochlorine pesticides				
	Isodrin (mg/kg)	HCB (mg/kg)	Methoxychlor (mg/kg)	Mirex (mg/kg)	Total OC Pesticides CLP (mg/kg)
ASC NEPM HIL A	N/A	10	300	10	N/A
ASC NEPM EIL (aged in urban soils)	N/A	N/A	N/A	N/A	N/A
Laboratory LOR	0.1	0.1	0.1	0.1	1.0

Sample	Sample date	Comment	Sample depth (m bgs)	Organochlorine pesticides				
				Isodrin (mg/kg)	HCB (mg/kg)	Methoxychlor (mg/kg)	Mirex (mg/kg)	Total OC Pesticides CLP (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	<0.1	<0.1	<0.1	<0.1	<1.0
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.	<1.0
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	N.A.	N.A.	N.A.	N.A.	<1.0
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	<0.1	<0.1	<0.1	<0.1	<1.0
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	<0.1	<0.1	<0.1	<0.1	<1.0
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	<0.1	<0.1	<0.1	<0.1	<1.0
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	N.A.	N.A.	N.A.	N.A.	<1.0
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	<0.1	<0.1	<0.1	<0.1	<1.0
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	N.A.	N.A.	N.A.	N.A.	<1.0
Rinsate	27/06/2023	Rinsate blank	N/A	N.A.	N.A.	N.A.	N.A.	N/A

Guideline	Organophosphate pesticides			
	Chlorpyrifos (mg/kg)	Dichlorvos (mg/kg)	Dimethoate (mg/kg)	Diazinon (mg/kg)
ASC NEPM HIL A	160	N/A	N/A	N/A
ASC NEPM EIL (aged in urban soils)	N/A	N/A	N/A	N/A
Laboratory LOR	0.2	0.5	0.5	0.5

Sample	Sample date	Comment	Sample depth (m bgs)	Organophosphate pesticides			
				Chlorpyrifos (mg/kg)	Dichlorvos (mg/kg)	Dimethoate (mg/kg)	Diazinon (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	<0.2	<0.5	<0.5	<0.5
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	N.A.	N.A.	N.A.	N.A.
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	N.A.	N.A.	N.A.	N.A.
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	N.A.	N.A.	N.A.	N.A.
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	N.A.	N.A.	N.A.	N.A.
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	<0.2	<0.5	<0.5	<0.5
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	N.A.	N.A.	N.A.	N.A.
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	N.A.	N.A.	N.A.	N.A.
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	N.A.	N.A.	N.A.	N.A.
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	N.A.	N.A.	N.A.	N.A.
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	N.A.	N.A.	N.A.	N.A.
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	<0.2	<0.5	<0.5	<0.5
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	N.A.	N.A.	N.A.	N.A.
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	N.A.	N.A.	N.A.	N.A.
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	N.A.	N.A.	N.A.	N.A.
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	<0.2	<0.5	<0.5	<0.5
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	N.A.	N.A.	N.A.	N.A.
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	N.A.	N.A.	N.A.	N.A.
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	N.A.	N.A.	N.A.	N.A.
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	<0.2	<0.5	<0.5	<0.5
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	N.A.	N.A.	N.A.	N.A.
Rinsate	27/06/2023	Rinsate blank	N/A	N.A.	N.A.	N.A.	N.A.

Guideline	Organophosphate pesticides			
	Fenitrothion (mg/kg)	Malathion (mg/kg)	Parathion (mg/kg)	Bromophos ethyl (mg/kg)
ASC NEPM HIL A	N/A	N/A	N/A	N/A
ASC NEPM EIL (aged in urban soils)	N/A	N/A	N/A	N/A
Laboratory LOR	0.2	0.2	0.2	0.2

Sample	Sample date	Comment	Sample depth (m bgs)	Organophosphate pesticides			
				Fenitrothion (mg/kg)	Malathion (mg/kg)	Parathion (mg/kg)	Bromophos ethyl (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	<0.2	<0.2	<0.2	<0.2
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	N.A.	N.A.	N.A.	N.A.
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	N.A.	N.A.	N.A.	N.A.
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	N.A.	N.A.	N.A.	N.A.
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	N.A.	N.A.	N.A.	N.A.
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	<0.2	<0.2	<0.2	<0.2
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	N.A.	N.A.	N.A.	N.A.
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	N.A.	N.A.	N.A.	N.A.
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	N.A.	N.A.	N.A.	N.A.
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	N.A.	N.A.	N.A.	N.A.
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	N.A.	N.A.	N.A.	N.A.
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	<0.2	<0.2	<0.2	<0.2
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	N.A.	N.A.	N.A.	N.A.
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	N.A.	N.A.	N.A.	N.A.
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	N.A.	N.A.	N.A.	N.A.
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	<0.2	<0.2	<0.2	<0.2
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	N.A.	N.A.	N.A.	N.A.
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	N.A.	N.A.	N.A.	N.A.
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	N.A.	N.A.	N.A.	N.A.
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	<0.2	<0.2	<0.2	<0.2
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	N.A.	N.A.	N.A.	N.A.
Rinsate	27/06/2023	Rinsate blank	N/A	N.A.	N.A.	N.A.	N.A.

Guideline	Organophosphate pesticides			
	Methadathion (mg/kg)	Ethion (mg/kg)	Azinphos (mg/kg)	Total OP Pesticides (mg/kg)
ASC NEPM HIL A	N/A	N/A	N/A	N/A
ASC NEPM EIL (aged in urban soils)	N/A	N/A	N/A	N/A
Laboratory LOR	0.5	0.3	0.2	1.7

Sample	Sample date	Comment	Sample depth (m bgs)	Organophosphate pesticides			
				Methidathion (mg/kg)	Ethion (mg/kg)	Azinphos (mg/kg)	Total OP Pesticides (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	<0.5	<0.2	<0.2	<1.7
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	N.A.	N.A.	N.A.	N.A.
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	N.A.	N.A.	N.A.	N.A.
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	N.A.	N.A.	N.A.	N.A.
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	N.A.	N.A.	N.A.	N.A.
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	<0.5	<0.2	<0.2	<1.7
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	N.A.	N.A.	N.A.	N.A.
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	N.A.	N.A.	N.A.	N.A.
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	N.A.	N.A.	N.A.	N.A.
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	N.A.	N.A.	N.A.	N.A.
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	N.A.	N.A.	N.A.	N.A.
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	<0.5	<0.2	<0.2	<1.7
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	N.A.	N.A.	N.A.	N.A.
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	N.A.	N.A.	N.A.	N.A.
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	N.A.	N.A.	N.A.	N.A.
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	<0.5	<0.2	<0.2	<1.7
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	N.A.	N.A.	N.A.	N.A.
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	N.A.	N.A.	N.A.	N.A.
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	N.A.	N.A.	N.A.	N.A.
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	<0.5	<0.2	<0.2	<1.7
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	N.A.	N.A.	N.A.	N.A.
Rinsate	27/06/2023	Rinsate blank	N/A	N.A.	N.A.	N.A.	N.A.

Guideline	Pyrethroids			
	Bifenthrin (mg/kg)	cis-Permethrin (mg/kg)	trans-Permethrin (mg/kg)	Cyfluthrin (mg/kg)
ASC NEPM HIL A	600	N/A	N/A	N/A
ASC NEPM EIL (aged in urban soils)	N/A	N/A	N/A	N/A
Laboratory LOR	0.5	0.5	0.5	1.0

Sample	Sample date	Comment	Sample depth (m bgs)	Pyrethroids			
				Bifenthrin (mg/kg)	cis-Permethrin (mg/kg)	trans-Permethrin (mg/kg)	Cyfluthrin (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	<0.5	<0.5	<0.5	<1
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	N.A.	N.A.	N.A.	N.A.
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	N.A.	N.A.	N.A.	N.A.
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	N.A.	N.A.	N.A.	N.A.
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	<0.5	<0.5	<0.5	<1
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	<0.5	<0.5	<0.5	<1
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	N.A.	N.A.	N.A.	N.A.
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	<0.5	<0.5	<0.5	<1
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	N.A.	N.A.	N.A.	N.A.
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	<0.5	<0.5	<0.5	<1
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	N.A.	N.A.	N.A.	N.A.
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	<0.5	<0.5	<0.5	<1
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	N.A.	N.A.	N.A.	N.A.
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	<0.5	<0.5	<0.5	<1
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	N.A.	N.A.	N.A.	N.A.
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	<0.5	<0.5	<0.5	<1
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	N.A.	N.A.	N.A.	N.A.
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	<0.5	<0.5	<0.5	<1
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	N.A.	N.A.	N.A.	N.A.
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	<0.5	<0.5	<0.5	<1
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	N.A.	N.A.	N.A.	N.A.
Rinsate	27/06/2023	Rinsate blank	N/A	N.A.	N.A.	N.A.	N.A.

Guideline	Pyrethroids			Carbamates	
	Cypermethrin (mg/kg)	Esfenvalerate (mg/kg)	Deltamethrin (mg/kg)	Carbofuran (mg/kg)	Carboryl (mg/kg)
ASC NEPM HIL A	N/A	N/A	N/A	N/A	N/A
ASC NEPM EIL (aged in urban soils)	N/A	N/A	N/A	N/A	N/A
Laboratory LOR	1.0	0.5	0.5	0.5	0.5

Sample	Sample date	Comment	Sample depth (m bgs)	Pyrethroids			Carbamates	
				Cypermethrin (mg/kg)	Esfenvalerate (mg/kg)	Deltamethrin (mg/kg)	Carbofuran (mg/kg)	Carbaryl (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	<1	<0.5	<0.5	<0.5	<0.5
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	<0.5	<0.5
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	<0.5	<0.5
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	<1	<0.5	<0.5	<0.5	<0.5
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	<1	<0.5	<0.5	<0.5	<0.5
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	<1	<0.5	<0.5	<0.5	<0.5
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	<1	<0.5	<0.5	<0.5	<0.5
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	<1	<0.5	<0.5	<0.5	<0.5
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	<1	<0.5	<0.5	<0.5	<0.5
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	<1	<0.5	<0.5	<0.5	<0.5
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	<1	<0.5	<0.5	<0.5	<0.5
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	<1	<0.5	<0.5	<0.5	<0.5
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	N.A.	N.A.	N.A.	N.A.	N.A.
Rinsate	27/06/2023	Rinsate blank	N/A	N.A.	N.A.	N.A.	N.A.	N.A.

Guideline	Pheoxy herbicides					Pyridine herbicides
	2,4,5 T (mg/kg)	2,4 D (mg/kg)	MCPA (mg/kg)	MCPB (mg/kg)	Mecoprop (mg/kg)	Picloram (mg/kg)
ASC NEPM HIL A	600	900	600	600	600	4500
ASC NEPM EIL (aged in urban soils)	N/A	N/A	N/A	N/A	N/A	N/A
Laboratory LOR	0.01	0.01	0.01	0.01	0.01	0.01

Sample	Sample date	Comment	Sample depth (m bgs)	Pheoxy herbicides					Pyridine herbicides
				2,4,5 T (mg/kg)	2,4 D (mg/kg)	MCPA (mg/kg)	MCPB (mg/kg)	Mecoprop (mg/kg)	Picloram (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Rinsate	27/06/2023	Rinsate blank	N/A	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Guideline	Triazine herbicides	Notes
	Atrazine (mg/kg)	
ASC NEPM HIL A	320	[a]Assumes all chromium present is in the hexavalent form.
ASC NEPM EIL (aged in urban soils)	N/A	[b]Assumes all mercury present in methyl mercury form.
Laboratory LOR	0.5	

Sample	Sample date	Comment	Sample depth (m bgs)	Triazine herbicides
				Atrazine (mg/kg)
Sample 1 0.1-0.25	27/06/2023	Sample location 1	0.10–0.25	<0.5
QC1	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	<0.5
QC2	27/06/2023	Replicate Sample 1 0.1-0.25	0.10–0.25	<0.5
Sample 1 0.3-0.4	27/06/2023	Sample location 1	0.30–0.40	N.A.
QC3	27/06/2023	Replicate Sample 1 0.1-0.25	0.30–0.40	N.A.
Sample 2 0.1-0.2	27/06/2023	Sample location 2	0.10–0.20	N.A.
Sample 2 0.2-0.25	27/06/2023	Sample location 2	0.20–0.25	<0.5
Sample 3 0.1-0.2	27/06/2023	Sample location 3	0.10–0.20	<0.5
Sample 3 0.2-0.3	27/06/2023	Sample location 3	0.20–0.30	N.A.
Sample 4 0.1-0.15	27/06/2023	Sample location 4	0.10–0.15	<0.5
Sample 4 0.2-0.3	27/06/2023	Sample location 4	0.20–0.30	N.A.
Sample 5 0.1-0.4	27/06/2023	Sample location 5	0.10–0.40	<0.5
Sample 5 0.3-0.4	27/06/2023	Sample location 5	0.30–0.40	N.A.
Sample 6 0.1-0.2	27/06/2023	Sample location 6	0.10–0.20	<0.5
Sample 6 0.2-0.3	27/06/2023	Sample location 6	0.20–0.30	N.A.
Sample 7 0.1-0.2	27/06/2023	Sample location 7	0.10–0.20	<0.5
Sample 7 0.25-0.35	27/06/2023	Sample location 7	0.25–0.35	N.A.
Sample 8 0.1-0.2	27/06/2023	Sample location 8	0.10–0.20	<0.5
Sample 8 0.3-0.4	27/06/2023	Sample location 8	0.30–0.4	N.A.
Sample 9 0.1-0.2	27/06/2023	Sample location 9	0.10–0.20	<0.5
Sample 9 0.25-0.3	27/06/2023	Sample location 9	0.25–0.30	N.A.
Sample 10 0.1-0.2	27/06/2023	Sample location 10	0.10–0.20	<0.5
Sample 10 0.3-0.35	27/06/2023	Sample location 10	0.30–0.35	N.A.
Rinsate	27/06/2023	Rinsate blank	N/A	N.A.

	Sample	Sample date	Location	Comment	Sample depth (m bgs)	Eight metals		
						Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)
	Sample 1 0.1–0.25	27/06/2023	Sample location 1	A horizon	0.10–0.25	1	<0.3	3.7
	QC1	27/06/2023	Replicate Sample 1 0.1-0.25	A1 horizon	0.10–0.25	1	<0.3	5.2
	QC2	27/06/2023	Replicate Sample 1 0.1-0.25	Replicate Sample 1	0.10–0.25	1	<0.3	4.1
	Sample 1 0.3–0.4	27/06/2023	Sample location 1	C horizon	0.30–0.40	<1	<0.3	5.2
	QC3	27/06/2023	Replicate Sample 1 0.1-0.25	Replicate Sample 11	0.30–0.40	3	<0.3	11
					Laboratory LOR	1.0	0.3	0.5
RPD	Sample 1 0.1–0.25 & QC1					0	N/A	-34
	Sample 1 0.1–0.25 & QC2					0	N/A	24
	Sample 1 0.3–0.4 & Sample QC3					N/A	N/A	-72

Eight metals					Organochlorine pesticides				Organochlorine pesticides		
Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Mercury (mg/kg)	p,p'-DDD (mg/kg)	o,p'-DDD (mg/kg)	p,p'-DDE (mg/kg)	o,p'-DDE (mg/kg)	p,p'-DDT (mg/kg)	o,p'-DDT (mg/kg)	DDT+DDE+ DDD (mg/kg)
4	10	0.6	17	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	N.A.
3.9	9	0.7	14	<0.05	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4.2	10	0.7	17	<0.05	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
0.9	5	0.5	3	<0.05	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
<0.5	12	1.5	6	<0.05	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
0.5	1.0	0.5	2.0	0.05	0.1	0.1	0.1	0.1	0.1	0.1	N/A
3	11	-15	19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-7	-11	0	-19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	-82	-100	-67	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Organochlorine pesticides						Organochlorine pesticides				
Aldrin (mg/kg)	Dieldrin (mg/kg)	Aldrin and dieldrin (mg/kg)	Chlordane (alpha) (mg/kg)	Chlordane (gamma) (mg/kg)	Chlordane (mg/kg)	Alpha endosulfan (mg/kg)	Beta endosulfan (mg/kg)	Endosulfan sulfate (mg/kg)	Endosulfan (total) (mg/kg)	Endrin (mg/kg)
<0.1	<0.2	N.A.	<0.1	<0.1	N.A	<0.2	<0.2	<0.1	N.A.	<0.2
N.A.	N.A.	N.A.	N.A.	N.A.	N.A	N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.	N.A	N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.	N.A	N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.	N.A	N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.	N.A	N.A.	N.A.	N.A.	N.A.	N.A.
0.1	0.2	N/A	0.1	0.1	N/A	0.2	0.2	0.1	N/A	0.2
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Organochlorine pesticides				
Heptachlor (mg/kg)	Lindane (mg/kg)	Delta BHC (mg/kg)	Beta BHC (mg/kg)	Nonachlor (mg/kg)
<0.1	<0.1	<0.1	<0.1	<0.1
N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.
0.1	0.1	0.1	0.1	0.1
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

Organochlorine pesticides				
Isodrin (mg/kg)	HCB (mg/kg)	Methoxychlor (mg/kg)	Mirex (mg/kg)	Total OC Pesticides CLP (mg/kg)
<0.1	<0.1	<0.1	<0.1	<1.0
N.A.	N.A.	N.A.	N.A.	<1.0
N.A.	N.A.	N.A.	N.A.	<1.0
N.A.	N.A.	N.A.	N.A.	<1.0
N.A.	N.A.	N.A.	N.A.	<1.0
N.A.	N.A.	N.A.	N.A.	<1.0
0.1	0.1	0.1	0.1	1.0
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

Organophosphate pesticides				Organophosphate pesticides			
Chlorpyrifos (mg/kg)	Dichlorvos (mg/kg)	Dimethoate (mg/kg)	Diazinon (mg/kg)	Fenitrothion (mg/kg)	Malathion (mg/kg)	Parathion (mg/kg)	Bromophos ethyl (mg/kg)
<0.2	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
0.2	0.5	0.5	0.5	0.2	0.2	0.2	0.2
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Organophosphate pesticides				Pyrethroids			
Methidathion (mg/kg)	Ethion (mg/kg)	Azinphos (mg/kg)	Total OP Pesticides (mg/kg)	Bifenthrin (mg/kg)	cis-Permethrin (mg/kg)	trans-Permethrin (mg/kg)	Cyfluthrin (mg/kg)
<0.5	<0.2	<0.2	<1.7	<0.5	<0.5	<0.5	<1
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
0.5	0.3	0.2	1.7	0.5	0.5	0.5	1.0
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Pyrethroids			Carbamates		Pheoxy herbicides					Pyridine herbicides	Triazine herbicides
Cypermethrin (mg/kg)	Esfenvalerate (mg/kg)	Deltamethrin (mg/kg)	Carbofuran (mg/kg)	Carbaryl (mg/kg)	2,4,5 T (mg/kg)	2,4 D (mg/kg)	MCPA (mg/kg)	MCPB (mg/kg)	Mecoprop (mg/kg)	Picloram (mg/kg)	Atrazine (mg/kg)
<1	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.5
N.A.	N.A.	N.A.	<0.5	<0.5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<0.5
N.A.	N.A.	N.A.	<0.5	<0.5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<0.5
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1.0	0.5	0.5	0.5	0.5	0.01	0.01	0.01	0.01	0.01	0.01	0.5
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Appendix D.
Field core logs

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Auger sample Sample 1

PROJECT NUMBER MES2167	**DRILLING COMPANY** N/A Hand auger	**COORDINATES**
PROJECT NAME 41 King Street, DSI	**DRILLER** Julia Jasonsmith	**COORD SYS**
CLIENT GroupOne	**DRILL RIG** N/A	**SURFACE ELEVATIN** N/A
ADDRESS 41 King Street Tarago	**DRILLING METHOD** Hand auger	**WELL TOC** N/A
DRILLING DATE 27/06/2023	**TOTAL DEPTH** 0.4 m	**LOGGED BY** JJ
LICENCE NO. N/A	**DIAMETER** 0.15 m	**CHECKED BY** N/A
COMPLETION Filled in	**CASING** N/A	**SCREEN** N/A
COMMENTSN/A Near the corner of the main shed		

Depth (m)	Samples	Is Analysed?	Water	Graphic Log	Material Description	Moisture	Additional Observations
0.05					Sandy CLAY: Grey-brown sandy CLAY. Fine, well-graded sands, no discernible colour.	M	Plant roots and rootlets.
0.1	Sample 1 0.1--0.2	Y					
0.15							
0.2							
0.25					Sandy CLAY: Light grey-brown CLAY; Some fine gravels, subrounded, white and brown.	M	Plant roots and rootlets. Very sandy, almost a sand.
0.3	Sample 1 0.3--0.4	Y					
0.35							
0.4					Termination Depth at:0.4 m		
0.45							
0.5							
0.55							
0.6							
0.65							
0.7							
0.75							
0.8							
0.85							
0.9							
0.95							

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Auger sample Sample 2

PROJECT NUMBER MES2167	**DRILLING COMPANY** N/A Hand auger	**COORDINATES**
PROJECT NAME 41 King Street, DSI	**DRILLER** Julia Jasonsmith	**COORD SYS**
CLIENT GroupOne	**DRILL RIG** N/A	**SURFACE ELEVATIN** N/A
ADDRESS 41 King Street Tarago	**DRILLING METHOD** Hand auger	**WELL TOC** N/A
DRILLING DATE 27/06/2023	**TOTAL DEPTH** 0.25 m	**LOGGED BY** JJ
LICENCE NO. N/A	**DIAMETER** 0.15 m	**CHECKED BY** N/A
COMPLETION Filled in	**CASING** N/A	**SCREEN** N/A
COMMENTSN/A Near the corner of the main shed		

Depth (m)	Samples	Is Analysed?	Water	Graphic Log	Material Description	Moisture	Additional Observations
0.05					Silty CLAY: Brown silty CLAY.	M	Plant roots and rootlets, moist.
0.1	Sample 2 0.1--0.2	Y			Silty CLAY: Red-brown silty CLAY.	M	Plant roots and rootlets, moist.
0.15							
0.2	Sample 2 0.2--0.25	Y					
0.25					Termination Depth at:0.25 m		
0.3							
0.35							
0.4							
0.45							
0.5							
0.55							
0.6							
0.65							
0.7							
0.75							
0.8							
0.85							
0.9							
0.95							

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Auger sample Sample 3

PROJECT NUMBER MES2167	**DRILLING COMPANY** N/A Hand auger	**COORDINATES**
PROJECT NAME 41 King Street, DSI	**DRILLER** Julia Jasonsmith	**COORD SYS**
CLIENT GroupOne	**DRILL RIG** N/A	**SURFACE ELEVATIN** N/A
ADDRESS 41 King Street Tarago	**DRILLING METHOD** Hand auger	**WELL TOC** N/A
DRILLING DATE 27/06/2023	**TOTAL DEPTH** 0.3 m	**LOGGED BY** JJ
LICENCE NO. N/A	**DIAMETER** 0.15 m	**CHECKED BY** N/A
COMPLETION Filled in	**CASING** N/A	**SCREEN** N/A
COMMENTSN/A Near the corner of the main shed		

Depth (m)	Samples	Is Analysed?	Water	Graphic Log	Material Description	Moisture	Additional Observations
0.05					Silty CLAY: Brown silty CLAY.	M	Plant roots and rootlets, moist.
0.1	Sample 3 0.1--0.2	Y					
0.15					Sandy CLAY: Sandy CLAY: Light-brown sandy CLAY. Some fine to coarse, sub-angular to sub-rounded, grey-brown gravels.	M	Plant roots and rootlets, moist.
0.2	Sample 3 0.2--0.3	Y					
0.25					Termination Depth at:0.3 m		
0.3							
0.35							
0.4							
0.45							
0.5							
0.55							
0.6							
0.65							
0.7							
0.75							
0.8							
0.85							
0.9							
0.95							

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Auger sample Sample 4

PROJECT NUMBER MES2167	**DRILLING COMPANY** N/A Hand auger	**COORDINATES**
PROJECT NAME 41 King Street, DSI	**DRILLER** Julia Jasonsmith	**COORD SYS**
CLIENT GroupOne	**DRILL RIG** N/A	**SURFACE ELEVATIN** N/A
ADDRESS 41 King Street Tarago	**DRILLING METHOD** Hand auger	**WELL TOC** N/A
DRILLING DATE 27/06/2023	**TOTAL DEPTH** 0.3 m	**LOGGED BY** JJ
LICENCE NO. N/A	**DIAMETER** 0.15 m	**CHECKED BY** N/A
COMPLETION Filled in	**CASING** N/A	**SCREEN** N/A
COMMENTSN/A Near the corner of the main shed		

Depth (m)	Samples	Is Analysed?	Water	Graphic Log	Material Description	Moisture	Additional Observations
0.05					Silty CLAY: Brown silty CLAY.	M	Plant roots and rootlets, moist.
0.1	Sample 4 0.1--0.15	Y					
0.15					Sandy CLAY: Sandy CLAY: Light-brown sandy CLAY. Some fine to coarse, sub-angular to sub-rounded, grey-brown gravels.	M	Plant roots and rootlets, moist.
0.2	Sample 4 0.2--0.3	Y					
0.25					Termination Depth at:0.3 m		
0.3							
0.35							
0.4							
0.45							
0.5							
0.55							
0.6							
0.65							
0.7							
0.75							
0.8							
0.85							
0.9							
0.95							

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Auger sample Sample 5

PROJECT NUMBER MES2167	**DRILLING COMPANY** N/A Hand auger	**COORDINATES**
PROJECT NAME 41 King Street, DSI	**DRILLER** Julia Jasonsmith	**COORD SYS**
CLIENT GroupOne	**DRILL RIG** N/A	**SURFACE ELEVATIN** N/A
ADDRESS 41 King Street Tarago	**DRILLING METHOD** Hand auger	**WELL TOC** N/A
DRILLING DATE 27/06/2023	**TOTAL DEPTH** 0.4 m	**LOGGED BY** JJ
LICENCE NO. N/A	**DIAMETER** 0.15 m	**CHECKED BY** N/A
COMPLETION Filled in	**CASING** N/A	**SCREEN** N/A
COMMENTSN/A Near the corner of the main shed		

Depth (m)	Samples	Is Analysed?	Water	Graphic Log	Material Description	Moisture	Additional Observations
0.05					Sandy CLAY: Dark-brown CLAY; Medium, highly graded sands, (assumed to be) clear;	M	Plant roots and rootlets, moist.
0.1	Sample 5 0.1--0.2	Y					
0.15						M	Plant roots and rootlets, moist.
0.2							
0.25							
0.3	Sample 5 0.3--0.4	Y			Sandy CLAY: Grey-brown sandy CLAY; fine highly graded sands.		
0.35							
0.4					Termination Depth at:0.4 m		
0.45							
0.5							
0.55							
0.6							
0.65							
0.7							
0.75							
0.8							
0.85							
0.9							
0.95							

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Auger sample Sample 6

PROJECT NUMBER MES2167	**DRILLING COMPANY** N/A Hand auger	**COORDINATES**
PROJECT NAME 41 King Street, DSI	**DRILLER** Julia Jasonsmith	**COORD SYS**
CLIENT GroupOne	**DRILL RIG** N/A	**SURFACE ELEVATIN** N/A
ADDRESS 41 King Street Tarago	**DRILLING METHOD** Hand auger	**WELL TOC** N/A
DRILLING DATE 27/06/2023	**TOTAL DEPTH** 0.3 m	**LOGGED BY** JJ
LICENCE NO. N/A	**DIAMETER** 0.15 m	**CHECKED BY** N/A
COMPLETION Filled in	**CASING** N/A	**SCREEN** N/A
COMMENTSN/A Near the corner of the main shed		

Depth (m)	Samples	Is Analysed?	Water	Graphic Log	Material Description	Moisture	Additional Observations
0.05					Silty CLAY: Brown silty CLAY; some fine to coarse sub-angular gravels, white, brown, grey (colluvium).	M	Plant roots and rootlets, moist.
0.1	Sample 6 0.1--0.2	Y					
0.15							
0.2	Sample 6 0.2--0.3	Y			Silty CLAY: Red-brown silty CLAY; trace sub-rounded white gravels.	M	Plant roots and rootlets, moist.
0.25							
0.3					Termination Depth at:0.3 m		
0.35							
0.4							
0.45							
0.5							
0.55							
0.6							
0.65							
0.7							
0.75							
0.8							
0.85							
0.9							
0.95							

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Auger sample Sample 7

PROJECT NUMBER MES2167	**DRILLING COMPANY** N/A Hand auger	**COORDINATES**
PROJECT NAME 41 King Street, DSI	**DRILLER** Julia Jasonsmith	**COORD SYS**
CLIENT GroupOne	**DRILL RIG** N/A	**SURFACE ELEVATIN** N/A
ADDRESS 41 King Street Tarago	**DRILLING METHOD** Hand auger	**WELL TOC** N/A
DRILLING DATE 27/06/2023	**TOTAL DEPTH** 0.35 m	**LOGGED BY** JJ
LICENCE NO. N/A	**DIAMETER** 0.15 m	**CHECKED BY** N/A
COMPLETION Filled in	**CASING** N/A	**SCREEN** N/A
COMMENTSN/A Near the corner of the main shed		

Depth (m)	Samples	Is Analysed?	Water	Graphic Log	Material Description	Moisture	Additional Observations
0.05					Silty CLAY: Brown silty CLAY.	M	Plant roots and rootlets, moist.
0.1	Sample 7 0.1--0.2	Y					
0.15							
0.2					Silty CLAY: Brown silty CLAY; subrounded, fine to coarse gravels.	W	
0.25			▽				
0.3	Sample 7 0.25--0.35	Y			Termination Depth at:0.35 m		Plant roots and rootlets, moist.
0.35							
0.4							
0.45							
0.5							
0.55							
0.6							
0.65							
0.7							
0.75							
0.8							
0.85							
0.9							
0.95							

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Auger sample Sample 8

PROJECT NUMBER MES2167	**DRILLING COMPANY** N/A Hand auger	**COORDINATES**
PROJECT NAME 41 King Street, DSI	**DRILLER** Julia Jasonsmith	**COORD SYS**
CLIENT GroupOne	**DRILL RIG** N/A	**SURFACE ELEVATIN** N/A
ADDRESS 41 King Street Tarago	**DRILLING METHOD** Hand auger	**WELL TOC** N/A
DRILLING DATE 27/06/2023	**TOTAL DEPTH** 0.4 m	**LOGGED BY** JJ
LICENCE NO. N/A	**DIAMETER** 0.15 m	**CHECKED BY** N/A
COMPLETION Filled in	**CASING** N/A	**SCREEN** N/A
COMMENTSN/A Near the corner of the main shed		

Depth (m)	Samples	Is Analysed?	Water	Graphic Log	Material Description	Moisture	Additional Observations
0.05					Clayey SAND: well-graded, medium, rounded SANDS; brown clay.	M	Plant roots and rootlets, moist.
0.1	Sample 8 0.1--0.2	Y					
0.15							
0.2							
0.25							
0.3	Sample 8 0.3--0.4	Y			Clayey SAND: well-graded, medium, rounded SANDS; brown clay; some subangular to subrounded gravels (possibly granite)		
0.4					Termination Depth at:0.4 m		
0.45							
0.5							
0.55							
0.6							
0.65							
0.7							
0.75							
0.8							
0.85							
0.9							
0.95							

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Auger sample Sample 9

PROJECT NUMBER MES2167	**DRILLING COMPANY** N/A Hand auger	**COORDINATES**
PROJECT NAME 41 King Street, DSI	**DRILLER** Julia Jasonsmith	**COORD SYS**
CLIENT GroupOne	**DRILL RIG** N/A	**SURFACE ELEVATIN** N/A
ADDRESS 41 King Street Tarago	**DRILLING METHOD** Hand auger	**WELL TOC** N/A
DRILLING DATE 27/06/2023	**TOTAL DEPTH** 0.3 m	**LOGGED BY** JJ
LICENCE NO. N/A	**DIAMETER** 0.15 m	**CHECKED BY** N/A
COMPLETION Filled in	**CASING** N/A	**SCREEN** N/A
COMMENTSN/A Near the corner of the main shed		

Depth (m)	Samples	Is Analysed?	Water	Graphic Log	Material Description	Moisture	Additional Observations
0.05					Sandy CLAY: brown CLAY; fine, rounded, clear sands.	M	Plant roots and rootlets, moist.
0.1	Sample 9 0.1--0.2	Y					
0.15							
0.2							
0.25	Sample 9 0.25--0.3	Y			Silty CLAY: red-brown CLAY.	M	Plant roots and rootlets, moist.
0.3					Termination Depth at:0.3 m		
0.35							
0.4							
0.45							
0.5							
0.55							
0.6							
0.65							
0.7							
0.75							
0.8							
0.85							
0.9							
0.95							

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Auger sample Sample 10

PROJECT NUMBER MES2167	**DRILLING COMPANY** N/A Hand auger	**COORDINATES**
PROJECT NAME 41 King Street, DSI	**DRILLER** Julia Jasonsmith	**COORD SYS**
CLIENT GroupOne	**DRILL RIG** N/A	**SURFACE ELEVATIN** N/A
ADDRESS 41 King Street Tarago	**DRILLING METHOD** Hand auger	**WELL TOC** N/A
DRILLING DATE 27/06/2023	**TOTAL DEPTH** 0.35 m	**LOGGED BY** JJ
LICENCE NO. N/A	**DIAMETER** 0.15 m	**CHECKED BY** N/A
COMPLETION Filled in	**CASING** N/A	**SCREEN** N/A
COMMENTSN/A Near the corner of the main shed		

Depth (m)	Samples	Is Analysed?	Water	Graphic Log	Material Description	Moisture	Additional Observations
0.05					Silty CLAY: brown silty CLAY.	M	Plant roots and rootlets, moist.
0.1	Sample 10 0.1--0.2	Y					
0.15							
0.2							
0.25					Silty CLAY: light-brown silty CLAY	W	Plant roots and rootlets, moist.
0.3	Sample 10 0.3--0.35	Y	▽				
0.35					Termination Depth at:0.35 m		
0.4							
0.45							
0.5							
0.55							
0.6							
0.65							
0.7							
0.75							
0.8							
0.85							
0.9							
0.95							

Disclaimer This bore log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 29 Jun 2023

Appendix E.
Laboratory quality assurance and quality control

02 6161 1762

contact@murrang.com.au

www.murrang.com.au
ABN 96 162 928 958

STATEMENT OF QA/QC PERFORMANCE

SE249904 R0

CLIENT DETAILS

Contact	Julia Jasonsmith
Client	MURRANG EARTH SCIENCES PTY LTD
Address	GPO BOX 2310 CANBERRA ACT 2601
Telephone	0406 621 214
Facsimile	(Not specified)
Email	julia.jasonsmith@murrang.com.au
Project	**MES2167**
Order Number	**MES2167**
Samples	24

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	**SE249904 R0**
Date Received	28 Jun 2023
Date Reported	06 Jul 2023

COMMENTS

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

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

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

METHOD BLANK	Carbamates in Soil	1 item

SAMPLE SUMMARY

Sample counts by matrix	23 Soil, 1 Water	Type of documentation received	COC
Date documentation received	28/6/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	11.4°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE249904 R0

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Carbamates in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
Sample 1 0.1-0.25	SE249904.001	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 2 0.1-0.25	SE249904.003	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 3 0.1-0.2	SE249904.005	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 4 0.1-0.15	SE249904.007	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 5 0.1-0.4	SE249904.009	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
QC1	SE249904.011	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
QC2	SE249904.012	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 6 0.1-0.2	SE249904.014	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 7 0.1-0.2	SE249904.016	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 8 0.1-0.2	SE249904.018	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 9 0.1-0.2	SE249904.020	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 10 0.1-0.2	SE249904.022	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
Rinsate	SE249904.013	LB284151	27 Jun 2023	28 Jun 2023	25 Jul 2023	03 Jul 2023	25 Jul 2023	04 Jul 2023

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
Sample 1 0.1-0.25	SE249904.001	LB284032	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	04 Jul 2023
Sample 1 0.3-0.4	SE249904.002	LB284032	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	04 Jul 2023
Sample 2 0.1-0.25	SE249904.003	LB284032	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	04 Jul 2023
Sample 2 0.1-0.2	SE249904.004	LB284032	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	04 Jul 2023
Sample 3 0.1-0.2	SE249904.005	LB284032	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	04 Jul 2023
Sample 3 0.2-0.3	SE249904.006	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
Sample 4 0.1-0.15	SE249904.007	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
Sample 4 0.2-0.3	SE249904.008	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
Sample 5 0.1-0.4	SE249904.009	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
Sample 5 0.3-0.4	SE249904.010	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
QC1	SE249904.011	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
QC2	SE249904.012	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
Sample 6 0.1-0.2	SE249904.014	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
Sample 6 0.2-0.3	SE249904.015	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
Sample 7 0.1-0.2	SE249904.016	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
Sample 7 0.25-0.35	SE249904.017	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
Sample 8 0.1-0.2	SE249904.018	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
Sample 8 0.3-0.4	SE249904.019	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
Sample 9 0.1-0.2	SE249904.020	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
Sample 9 0.25-0.3	SE249904.021	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
Sample 10 0.1-0.2	SE249904.022	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
Sample 10 0.3-0.35	SE249904.023	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023
QC3	SE249904.024	LB284033	27 Jun 2023	28 Jun 2023	25 Jul 2023	29 Jun 2023	25 Jul 2023	05 Jul 2023

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
Sample 1 0.1-0.25	SE249904.001	LB284094	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 1 0.3-0.4	SE249904.002	LB284094	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 2 0.1-0.25	SE249904.003	LB284094	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 2 0.1-0.2	SE249904.004	LB284094	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 3 0.1-0.2	SE249904.005	LB284094	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 3 0.2-0.3	SE249904.006	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 4 0.1-0.15	SE249904.007	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 4 0.2-0.3	SE249904.008	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 5 0.1-0.4	SE249904.009	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 5 0.3-0.4	SE249904.010	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
QC1	SE249904.011	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
QC2	SE249904.012	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 6 0.1-0.2	SE249904.014	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 6 0.2-0.3	SE249904.015	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 7 0.1-0.2	SE249904.016	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023

HOLDING TIME SUMMARY

SE249904 R0

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Moisture Content (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
Sample 7 0.25-0.35	SE249904.017	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 8 0.1-0.2	SE249904.018	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 8 0.3-0.4	SE249904.019	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 9 0.1-0.2	SE249904.020	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 9 0.25-0.3	SE249904.021	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 10 0.1-0.2	SE249904.022	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
Sample 10 0.3-0.35	SE249904.023	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023
QC3	SE249904.024	LB284095	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	05 Jul 2023	04 Jul 2023

OC Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
Sample 1 0.1-0.25	SE249904.001	LB284019	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	04 Jul 2023
Sample 3 0.1-0.2	SE249904.005	LB284019	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	04 Jul 2023
Sample 6 0.1-0.2	SE249904.014	LB284019	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	04 Jul 2023
Sample 8 0.1-0.2	SE249904.018	LB284019	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	04 Jul 2023
Sample 10 0.1-0.2	SE249904.022	LB284019	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	04 Jul 2023

OP Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
Sample 1 0.1-0.25	SE249904.001	LB284019	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 3 0.1-0.2	SE249904.005	LB284019	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 6 0.1-0.2	SE249904.014	LB284019	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 8 0.1-0.2	SE249904.018	LB284019	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 10 0.1-0.2	SE249904.022	LB284019	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023

Synthetic Pyrethroids in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
Sample 1 0.1-0.25	SE249904.001	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 2 0.1-0.25	SE249904.003	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 3 0.1-0.2	SE249904.005	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 4 0.1-0.15	SE249904.007	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 5 0.1-0.4	SE249904.009	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
QC1	SE249904.011	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
QC2	SE249904.012	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 6 0.1-0.2	SE249904.014	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 7 0.1-0.2	SE249904.016	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 8 0.1-0.2	SE249904.018	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 9 0.1-0.2	SE249904.020	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 10 0.1-0.2	SE249904.022	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
Sample 1 0.1-0.25	SE249904.001	LB284026	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 1 0.3-0.4	SE249904.002	LB284026	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 2 0.1-0.25	SE249904.003	LB284026	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 2 0.1-0.2	SE249904.004	LB284026	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 3 0.1-0.2	SE249904.005	LB284026	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 3 0.2-0.3	SE249904.006	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 4 0.1-0.15	SE249904.007	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 4 0.2-0.3	SE249904.008	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 5 0.1-0.4	SE249904.009	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 5 0.3-0.4	SE249904.010	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
QC1	SE249904.011	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
QC2	SE249904.012	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 6 0.1-0.2	SE249904.014	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 6 0.2-0.3	SE249904.015	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 7 0.1-0.2	SE249904.016	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 7 0.25-0.35	SE249904.017	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 8 0.1-0.2	SE249904.018	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 8 0.3-0.4	SE249904.019	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 9 0.1-0.2	SE249904.020	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 9 0.25-0.3	SE249904.021	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023

HOLDING TIME SUMMARY

SE249904 R0

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
Sample 10 0.1-0.2	SE249904.022	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
Sample 10 0.3-0.35	SE249904.023	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023
QC3	SE249904.024	LB284027	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	04 Jul 2023

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
Rinsate	SE249904.013	LB283919	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	29 Jun 2023

Triazines in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
Sample 1 0.1-0.25	SE249904.001	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 2 0.1-0.25	SE249904.003	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 3 0.1-0.2	SE249904.005	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 4 0.1-0.15	SE249904.007	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 5 0.1-0.4	SE249904.009	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
QC1	SE249904.011	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
QC2	SE249904.012	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 6 0.1-0.2	SE249904.014	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 7 0.1-0.2	SE249904.016	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 8 0.1-0.2	SE249904.018	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 9 0.1-0.2	SE249904.020	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023
Sample 10 0.1-0.2	SE249904.022	LB284020	27 Jun 2023	28 Jun 2023	11 Jul 2023	29 Jun 2023	08 Aug 2023	05 Jul 2023

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
Sample 1 0.1-0.25	SE249904.001	LB283872	27 Jun 2023	28 Jun 2023	11 Jul 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023
Sample 3 0.1-0.2	SE249904.005	LB283872	27 Jun 2023	28 Jun 2023	11 Jul 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023
Sample 6 0.1-0.2	SE249904.014	LB283872	27 Jun 2023	28 Jun 2023	11 Jul 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023
Sample 8 0.1-0.2	SE249904.018	LB283872	27 Jun 2023	28 Jun 2023	11 Jul 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023
Sample 10 0.1-0.2	SE249904.022	LB283872	27 Jun 2023	28 Jun 2023	11 Jul 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023

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

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

Carbamates in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d14-p-terphenyl (Surrogate)	Sample 1 0.1-0.25	SE249904.001	%	70 - 130%	96
	Sample 2 0.1-0.25	SE249904.003	%	70 - 130%	94
	Sample 3 0.1-0.2	SE249904.005	%	70 - 130%	94
	Sample 4 0.1-0.15	SE249904.007	%	70 - 130%	92
	Sample 5 0.1-0.4	SE249904.009	%	70 - 130%	96
	QC1	SE249904.011	%	70 - 130%	96
	QC2	SE249904.012	%	70 - 130%	94
	Sample 6 0.1-0.2	SE249904.014	%	70 - 130%	94
	Sample 7 0.1-0.2	SE249904.016	%	70 - 130%	92
	Sample 8 0.1-0.2	SE249904.018	%	70 - 130%	94
	Sample 9 0.1-0.2	SE249904.020	%	70 - 130%	92
	Sample 10 0.1-0.2	SE249904.022	%	70 - 130%	94

OC Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	Sample 1 0.1-0.25	SE249904.001	%	60 - 130%	74
	Sample 3 0.1-0.2	SE249904.005	%	60 - 130%	85
	Sample 6 0.1-0.2	SE249904.014	%	60 - 130%	83
	Sample 8 0.1-0.2	SE249904.018	%	60 - 130%	86
	Sample 10 0.1-0.2	SE249904.022	%	60 - 130%	83

OP Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	Sample 1 0.1-0.25	SE249904.001	%	60 - 130%	102
	Sample 3 0.1-0.2	SE249904.005	%	60 - 130%	98
	Sample 6 0.1-0.2	SE249904.014	%	60 - 130%	98
	Sample 8 0.1-0.2	SE249904.018	%	60 - 130%	103
	Sample 10 0.1-0.2	SE249904.022	%	60 - 130%	102
d14-p-terphenyl (Surrogate)	Sample 1 0.1-0.25	SE249904.001	%	60 - 130%	98
	Sample 3 0.1-0.2	SE249904.005	%	60 - 130%	97
	Sample 6 0.1-0.2	SE249904.014	%	60 - 130%	98
	Sample 8 0.1-0.2	SE249904.018	%	60 - 130%	99
	Sample 10 0.1-0.2	SE249904.022	%	60 - 130%	100

Synthetic Pyrethroids in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d14-p-terphenyl (Surrogate)	Sample 1 0.1-0.25	SE249904.001	%	70 - 130%	96
	Sample 2 0.1-0.25	SE249904.003	%	70 - 130%	94
	Sample 3 0.1-0.2	SE249904.005	%	70 - 130%	94
	Sample 4 0.1-0.15	SE249904.007	%	70 - 130%	92
	Sample 5 0.1-0.4	SE249904.009	%	70 - 130%	96
	Sample 6 0.1-0.2	SE249904.014	%	70 - 130%	94
	Sample 7 0.1-0.2	SE249904.016	%	70 - 130%	92
	Sample 8 0.1-0.2	SE249904.018	%	70 - 130%	94
	Sample 9 0.1-0.2	SE249904.020	%	70 - 130%	92
	Sample 10 0.1-0.2	SE249904.022	%	70 - 130%	94

Triazines in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d14-p-terphenyl (Surrogate)	Sample 1 0.1-0.25	SE249904.001	%	70 - 130%	94
	Sample 2 0.1-0.25	SE249904.003	%	70 - 130%	94
	Sample 3 0.1-0.2	SE249904.005	%	70 - 130%	90
	Sample 4 0.1-0.15	SE249904.007	%	70 - 130%	92
	Sample 5 0.1-0.4	SE249904.009	%	70 - 130%	94
	QC1	SE249904.011	%	70 - 130%	94
	QC2	SE249904.012	%	70 - 130%	94
	Sample 6 0.1-0.2	SE249904.014	%	70 - 130%	94
	Sample 7 0.1-0.2	SE249904.016	%	70 - 130%	92
	Sample 8 0.1-0.2	SE249904.018	%	70 - 130%	92
	Sample 9 0.1-0.2	SE249904.020	%	70 - 130%	94
	Sample 10 0.1-0.2	SE249904.022	%	70 - 130%	90

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

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

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	Sample 1 0.1-0.25	SE249904.001	%	60 - 130%	96
	Sample 3 0.1-0.2	SE249904.005	%	60 - 130%	95
	Sample 6 0.1-0.2	SE249904.014	%	60 - 130%	83
	Sample 8 0.1-0.2	SE249904.018	%	60 - 130%	75
	Sample 10 0.1-0.2	SE249904.022	%	60 - 130%	87
d4-1,2-dichloroethane (Surrogate)	Sample 1 0.1-0.25	SE249904.001	%	60 - 130%	95
	Sample 3 0.1-0.2	SE249904.005	%	60 - 130%	81
	Sample 6 0.1-0.2	SE249904.014	%	60 - 130%	93
	Sample 8 0.1-0.2	SE249904.018	%	60 - 130%	92
	Sample 10 0.1-0.2	SE249904.022	%	60 - 130%	85
d8-toluene (Surrogate)	Sample 1 0.1-0.25	SE249904.001	%	60 - 130%	90
	Sample 3 0.1-0.2	SE249904.005	%	60 - 130%	95
	Sample 6 0.1-0.2	SE249904.014	%	60 - 130%	108
	Sample 8 0.1-0.2	SE249904.018	%	60 - 130%	101
	Sample 10 0.1-0.2	SE249904.022	%	60 - 130%	78

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.

Carbamates in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB284020.001	Carbamates	Carbofuran	mg/kg	0.5	<0.5
		Carbaryl	mg/kg	0.5	<0.5
	Surrogates	d14-p-terphenyl (Surrogate)	%	-	106

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Number	Parameter	Units	LOR	Result
LB284151.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB284032.001	Mercury	mg/kg	0.05	<0.05
LB284033.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB284019.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	83

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB284019.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	95
		d14-p-terphenyl (Surrogate)	%	-	98

Synthetic Pyrethroids in Soil

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

Sample Number	Parameter	Units	LOR

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

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

Synthetic Pyrethroids in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB284020.001	Surrogates	d14-p-terphenyl (Surrogate)	%	-	106
	Synthetic Pyrethroids	Bifenthrin	mg/kg	0.5	<0.5
		cis-Permethrin	mg/kg	0.5	<0.5
		trans-Permethrin	mg/kg	0.5	<0.5
		Cyfluthrin	mg/kg	1	<1
		Cypermethrin	mg/kg	1	<1
		Esfenvalerate	mg/kg	0.5	<0.5
		Deltamethrin	mg/kg	0.5	<0.5

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

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

Sample Number	Parameter	Units	LOR	Result
LB284026.001	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
LB284027.001	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

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB283919.001	Arsenic	µg/L	1	<1
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Copper	µg/L	1	<1
	Lead	µg/L	1	<1
	Nickel	µg/L	1	<1
	Zinc	µg/L	5	<5

Triazines in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB284020.001		Simazine	mg/kg	0.5	<0.5
		Atrazine	mg/kg	0.5	<0.5
		Propazine	mg/kg	0.5	<0.5
		Terbuthylazine	mg/kg	0.5	<0.5
		Metribuzin	mg/kg	0.5	<0.5
		Prometryn	mg/kg	0.5	<0.5
		Terbutryn	mg/kg	0.5	<0.5
		Cyanazine	mg/kg	0.5	<0.5
		Hexazinone	mg/kg	1	<1
	Surrogates	d14-p-terphenyl (Surrogate)	%	-	102

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB283872.001	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1
		1,2-dichloropropane	mg/kg	0.1	<0.1
		cis-1,3-dichloropropene	mg/kg	0.1	<0.1
		trans-1,3-dichloropropene	mg/kg	0.1	<0.1
		1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1
		Chloromethane	mg/kg	1	<1
		Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1
		Bromomethane	mg/kg	1	<1
		Chloroethane	mg/kg	1	<1
		Trichlorofluoromethane	mg/kg	1	<1
		1,1-dichloroethene	mg/kg	0.1	<0.1

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

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

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB283872.001	Halogenated Aliphatics	Iodomethane	mg/kg	5	<5
		Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5
		Allyl chloride	mg/kg	0.1	<0.1
		trans-1,2-dichloroethene	mg/kg	0.1	<0.1
		1,1-dichloroethane	mg/kg	0.1	<0.1
		cis-1,2-dichloroethene	mg/kg	0.1	<0.1
		Bromochloromethane	mg/kg	0.1	<0.1
		1,2-dichloroethane	mg/kg	0.1	<0.1
		1,1,1-trichloroethane	mg/kg	0.1	<0.1
		1,1-dichloropropene	mg/kg	0.1	<0.1
		Carbon tetrachloride	mg/kg	0.1	<0.1
		Dibromomethane	mg/kg	0.1	<0.1
		Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1
		1,1,2-trichloroethane	mg/kg	0.1	<0.1
		1,3-dichloropropane	mg/kg	0.1	<0.1
		Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1
		1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1
		1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1
		1,2,3-trichloropropane	mg/kg	0.1	<0.1
		trans-1,4-dichloro-2-butene	mg/kg	1	<1
		1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1
		Hexachlorobutadiene	mg/kg	0.1	<0.1
	Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	<0.1
		Bromobenzene	mg/kg	0.1	<0.1
		2-chlorotoluene	mg/kg	0.1	<0.1
		4-chlorotoluene	mg/kg	0.1	<0.1
		1,3-dichlorobenzene	mg/kg	0.1	<0.1
		1,4-dichlorobenzene	mg/kg	0.1	<0.1
		1,2-dichlorobenzene	mg/kg	0.1	<0.1
		1,2,4-trichlorobenzene	mg/kg	0.1	<0.1
		1,2,3-trichlorobenzene	mg/kg	0.1	<0.1
	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
		Styrene (Vinyl benzene)	mg/kg	0.1	<0.1
		o-xylene	mg/kg	0.1	<0.1
		Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1
		n-propylbenzene	mg/kg	0.1	<0.1
		1,3,5-trimethylbenzene	mg/kg	0.1	<0.1
		tert-butylbenzene	mg/kg	0.1	<0.1
		1,2,4-trimethylbenzene	mg/kg	0.1	<0.1
		sec-butylbenzene	mg/kg	0.1	<0.1
		p-isopropyltoluene	mg/kg	0.1	<0.1
		n-butylbenzene	mg/kg	0.1	<0.1
	Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	<0.1
		2-nitropropane	mg/kg	10	<10
	Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10
		MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1
		Vinyl acetate*	mg/kg	10	<10
		MIBK (4-methyl-2-pentanone)	mg/kg	1	<1
		2-hexanone (MBK)	mg/kg	5	<5
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	97
		d8-toluene (Surrogate)	%	-	110
		Bromofluorobenzene (Surrogate)	%	-	92
	Totals	Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8
		Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8
		Total BTEX*	mg/kg	0.6	<0.6
	Trihalomethanes	Chloroform (THM)	mg/kg	0.1	<0.1

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

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

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB283872.001	Trihalomethanes	Bromodichloromethane (THM)	mg/kg	0.1	<0.1
		Dibromochloromethane (THM)	mg/kg	0.1	<0.1
		Bromoform (THM)	mg/kg	0.1	<0.1

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 give a different calculated RPD.

Carbamates in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249904.022	LB284020.017	Carbamates	Carbofuran	mg/kg	0.5	<0.5	<0.5	200	0
			Carbaryl	mg/kg	0.5	<0.5	<0.5	200	0
		Surrogates	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249988.012	LB284151.021	Mercury	µg/L	0.0001	<0.0001	<0.0001	200	0

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249877.021	LB284032.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE249904.005	LB284032.020	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE249904.016	LB284033.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE249904.024	LB284033.023	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 %
SE249877.021	LB284094.011	% Moisture	%w/w	1	1.8	2.1	81	12
SE249904.005	LB284094.017	% Moisture	%w/w	1	23.9	16.9	35	35
SE249904.016	LB284095.011	% Moisture	%w/w	1	15.7	16.1	36	2
SE249904.024	LB284095.020	% Moisture	%w/w	1	9.0	9.1	41	1

OC Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249872.010	LB284019.014		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12	0.11	30	5
SE249904.022	LB284019.024		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0

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 give a different calculated RPD.

OC Pesticides in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249904.022	LB284019.024		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12	0.13	30	2

OP Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249872.010	LB284019.014		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.6	30	13
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	9
SE249904.022	LB284019.024		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2

Synthetic Pyrethroids in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249904.022	LB284020.017	Surrogates	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
		Synthetic	Bifenthrin	mg/kg	0.5	<0.5	<0.5	200	0
		Pyrethroids	cis-Permethrin	mg/kg	0.5	<0.5	<0.5	200	0
			trans-Permethrin	mg/kg	0.5	<0.5	<0.5	200	0

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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 give a different calculated RPD.

Synthetic Pyrethroids in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249904.022	LB284020.017	Synthetic Pyrethroids	Cyfluthrin	mg/kg	1	<1	<1	200	0
			Cypermethrin	mg/kg	1	<1	<1	200	0
			Esfenvalerate	mg/kg	0.5	<0.5	<0.5	200	0
			Deltamethrin	mg/kg	0.5	<0.5	<0.5	200	0

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 %
SE249877.021	LB284026.014	Arsenic, As	mg/kg	1	2	3	68	36
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	5.0	6.8	38	30
		Copper, Cu	mg/kg	0.5	8.1	9.1	36	12
		Nickel, Ni	mg/kg	0.5	3.1	4.6	43	40
		Lead, Pb	mg/kg	1	8	9	42	16
		Zinc, Zn	mg/kg	2	27	30	37	11
SE249904.005	LB284026.020	Arsenic, As	mg/kg	1	1	<1	122	19
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	7.0	5.3	38	29
		Copper, Cu	mg/kg	0.5	3.5	3.3	45	4
		Nickel, Ni	mg/kg	0.5	1.0	0.8	85	23
		Lead, Pb	mg/kg	1	10	9	41	11
		Zinc, Zn	mg/kg	2	13	13	46	4
SE249904.016	LB284027.014	Arsenic, As	mg/kg	1	2	2	85	3
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	8.8	6.5	37	30
		Copper, Cu	mg/kg	0.5	3.6	3.9	43	9
		Nickel, Ni	mg/kg	0.5	1.3	1.1	71	13
		Lead, Pb	mg/kg	1	12	12	38	2
		Zinc, Zn	mg/kg	2	13	14	45	4
SE249904.024	LB284027.023	Arsenic, As	mg/kg	1	3	3	64	3
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	11	11	34	0
		Copper, Cu	mg/kg	0.5	<0.5	<0.5	136	0
		Nickel, Ni	mg/kg	0.5	1.5	1.4	64	3
		Lead, Pb	mg/kg	1	12	14	38	17
		Zinc, Zn	mg/kg	2	6	6	65	0

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249915.002	LB283919.014	Arsenic	µg/L	1	1	1	84	0
		Cadmium	µg/L	0.1	0.2	0.2	62	24
		Chromium	µg/L	1	<1	<1	200	0
		Copper	µg/L	1	1	2	67	58
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	<1	<1	157	0
		Zinc	µg/L	5	200	200	17	2
SE249915.010	LB283919.023	Arsenic	µg/L	1	<1	<1	200	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	<1	<1	200	0
		Copper	µg/L	1	<1	<1	200	0
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	<1	<1	200	0
		Zinc	µg/L	5	<5	<5	200	0

Triazines in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249904.022	LB284020.017	Simazine	mg/kg	0.5	<0.5	<0.5	200	0
		Atrazine	mg/kg	0.5	<0.5	<0.5	200	0
		Propazine	mg/kg	0.5	<0.5	<0.5	200	0
		Terbuthylazine	mg/kg	0.5	<0.5	<0.5	200	0
		Metribuzin	mg/kg	0.5	<0.5	<0.5	200	0
		Prometryn	mg/kg	0.5	<0.5	<0.5	200	0
		Terbutryn	mg/kg	0.5	<0.5	<0.5	200	0

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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 give a different calculated RPD.

Triazines in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249904.022	LB284020.017		Cyanazine	mg/kg	0.5	<0.5	<0.5	200	0
			Hexazinone	mg/kg	1	<1	<1	200	0
		Surrogates	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249904.018	LB283872.014	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			cis-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	<0.1	200	0
		Halogenated	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	<1	200	0
		Aliphatics	Chloromethane	mg/kg	1	<1	<1	200	0
			Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	<0.1	200	0
			Bromomethane	mg/kg	1	<1	<1	200	0
			Chloroethane	mg/kg	1	<1	<1	200	0
			Trichlorofluoromethane	mg/kg	1	<1	<1	200	0
			1,1-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
			Iodomethane	mg/kg	5	<5	<5	200	0
			Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	<0.5	200	0
			Allyl chloride	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
			1,1-dichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			cis-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
			Bromochloromethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,1-trichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,1-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			Carbon tetrachloride	mg/kg	0.1	<0.1	<0.1	200	0
			Dibromomethane	mg/kg	0.1	<0.1	<0.1	200	0
			Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,2-trichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,3-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,3-trichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,4-dichloro-2-butene	mg/kg	1	<1	<1	200	0
			1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobutadiene	mg/kg	0.1	<0.1	<0.1	200	0
		Halogenated	Chlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatics	Bromobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			2-chlorotoluene	mg/kg	0.1	<0.1	<0.1	200	0
			4-chlorotoluene	mg/kg	0.1	<0.1	<0.1	200	0
			1,3-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,4-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
		Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	<0.1	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
			Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	<0.1	200	0
			n-propylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			tert-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			sec-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0

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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 give a different calculated RPD.

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249904.018	LB283872.014	Monocyclic Aromatic	p-isopropyltoluene	mg/kg	0.1	<0.1	<0.1	200	0
			n-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
		Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	<0.1	<0.1	200	0
			2-nitropropane	mg/kg	10	<10	<10	200	0
		Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10	<10	200	0
			MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	<0.1	200	0
			Vinyl acetate*	mg/kg	10	<10	<10	200	0
			MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	<1	200	0
			2-hexanone (MBK)	mg/kg	5	<5	<5	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.2	8.8	50	4
			d8-toluene (Surrogate)	mg/kg	-	10.1	8.6	50	16
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.5	9.1	50	19
		Totals	Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	200	0
			Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	<3.0	<3.0	200	0
			Total VOC*	mg/kg	24	<24	<24	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
		Trihalomethanes	Chloroform (THM)	mg/kg	0.1	<0.1	<0.1	200	0
			Bromodichloromethane (THM)	mg/kg	0.1	<0.1	<0.1	200	0
			Dibromochloromethane (THM)	mg/kg	0.1	<0.1	<0.1	200	0
			Bromoform (THM)	mg/kg	0.1	<0.1	<0.1	200	0
SE249904.022	LB283872.016	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			cis-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	<0.1	200	0
		Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	<1	200	0
			Chloromethane	mg/kg	1	<1	<1	200	0
			Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	<0.1	200	0
			Bromomethane	mg/kg	1	<1	<1	200	0
			Chloroethane	mg/kg	1	<1	<1	200	0
			Trichlorofluoromethane	mg/kg	1	<1	<1	200	0
			1,1-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
			Iodomethane	mg/kg	5	<5	<5	200	0
			Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	<0.5	200	0
			Allyl chloride	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
			1,1-dichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			cis-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
			Bromochloromethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,1-trichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,1-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			Carbon tetrachloride	mg/kg	0.1	<0.1	<0.1	200	0
			Dibromomethane	mg/kg	0.1	<0.1	<0.1	200	0
			Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,2-trichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,3-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,3-trichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,4-dichloro-2-butene	mg/kg	1	<1	<1	200	0
			1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobutadiene	mg/kg	0.1	<0.1	<0.1	200	0
		Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			Bromobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			2-chlorotoluene	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 give a different calculated RPD.

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249904.022	LB283872.016	Halogenated	4-chlorotoluene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatics	1,3-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,4-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
		Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	<0.1	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
			Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	<0.1	200	0
			n-propylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			tert-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			sec-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			p-isopropyltoluene	mg/kg	0.1	<0.1	<0.1	200	0
			n-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
		Nitrogenous	Acrylonitrile	mg/kg	0.1	<0.1	<0.1	200	0
		Compounds	2-nitropropane	mg/kg	10	<10	<10	200	0
		Oxygenated	Acetone (2-propanone)	mg/kg	10	<10	<10	200	0
		Compounds	MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	<0.1	200	0
			Vinyl acetate*	mg/kg	10	<10	<10	200	0
			MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	<1	200	0
			2-hexanone (MBK)	mg/kg	5	<5	<5	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.5	9.4	50	10
			d8-toluene (Surrogate)	mg/kg	-	7.8	10.4	50	28
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.7	8.8	50	1
		Totals	Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	200	0
			Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	<3.0	<3.0	200	0
			Total VOC*	mg/kg	24	<24	<24	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
		Trihalomethan	Chloroform (THM)	mg/kg	0.1	<0.1	<0.1	200	0
		es	Bromodichloromethane (THM)	mg/kg	0.1	<0.1	<0.1	200	0
			Dibromochloromethane (THM)	mg/kg	0.1	<0.1	<0.1	200	0
			Bromoform (THM)	mg/kg	0.1	<0.1	<0.1	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.

Carbamates in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB284020.002	Carbamates	Carbofuran	mg/kg	0.5	1.1	1	70 - 130	105
	Surrogates	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	90

Mercury in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB284032.002		Mercury	mg/kg	0.05	0.23	0.2	80 - 120	115
LB284033.002		Mercury	mg/kg	0.05	0.19	0.2	80 - 120	95

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB284019.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	90
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	86
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	87
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	69
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	66
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	105
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	86

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB284019.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.6	2	60 - 140	81
		Diazinon (Dimpylate)	mg/kg	0.5	1.7	2	60 - 140	85
		Dichlorvos	mg/kg	0.5	1.3	2	60 - 140	67
		Ethion	mg/kg	0.2	1.4	2	60 - 140	69
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	105
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	100

Synthetic Pyrethroids in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB284020.002	Surrogates	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	90
	Synthetic	Bifenthrin	mg/kg	0.5	0.9	1	70 - 130	90

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 %
LB284026.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	109
	Cadmium, Cd	mg/kg	0.3	4.1	4.81	70 - 130	86
	Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	108
	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	93	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	280	273	80 - 120	102
LB284027.002	Arsenic, As	mg/kg	1	340	318.22	80 - 120	106
	Cadmium, Cd	mg/kg	0.3	4.0	4.81	70 - 130	83
	Chromium, Cr	mg/kg	0.5	40	38.31	80 - 120	105
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	107
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	100
	Lead, Pb	mg/kg	1	91	89.9	80 - 120	101
	Zinc, Zn	mg/kg	2	280	273	80 - 120	101

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB283919.002	Arsenic	µg/L	1	21	20	80 - 120	106
	Cadmium	µg/L	0.1	21	20	80 - 120	105
	Chromium	µg/L	1	19	20	80 - 120	97
	Copper	µg/L	1	19	20	80 - 120	97
	Lead	µg/L	1	20	20	80 - 120	98
	Nickel	µg/L	1	21	20	80 - 120	104
	Zinc	µg/L	5	19	20	80 - 120	97

Triazines in Soil

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

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.

Triazines in Soil (continued)

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB284020.002	Atrazine	mg/kg	0.5	3.3	4	70 - 130	82
	Propazine	mg/kg	0.5	3.1	4	70 - 130	77
	Terbuthylazine	mg/kg	0.5	3.7	4	70 - 130	94
	Prometryn	mg/kg	0.5	3.1	4	70 - 130	79
	Terbutryn	mg/kg	0.5	3.2	4	70 - 130	80

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB283872.002	Halogenated	1,1-dichloroethene	mg/kg	0.1	4.0	5	60 - 140	81
	Aliphatics	1,2-dichloroethane	mg/kg	0.1	4.8	5	60 - 140	95
		Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	5.1	5	60 - 140	102
	Halogenated	Chlorobenzene	mg/kg	0.1	5.1	5	60 - 140	102
	Monocyclic	Benzene	mg/kg	0.1	5.4	5	60 - 140	109
	Aromatic	Toluene	mg/kg	0.1	5.7	5	60 - 140	113
		Ethylbenzene	mg/kg	0.1	5.3	5	60 - 140	107
		m/p-xylene	mg/kg	0.2	10	10	60 - 140	105
		o-xylene	mg/kg	0.1	5.3	5	60 - 140	106
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.0	10	70 - 130	120
		d8-toluene (Surrogate)	mg/kg	-	11.5	10	70 - 130	115
		Bromofluorobenzene (Surrogate)	mg/kg	-	11.7	10	70 - 130	117
	Trihalomethan	Chloroform (THM)	mg/kg	0.1	5.0	5	60 - 140	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.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249903.001	LB284151.004	Mercury	mg/L	0.0001	0.0018	<0.0001	0.008	89

Mercury in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249877.012	LB284032.004	Mercury	mg/kg	0.05	0.22	<0.05	0.2	106
SE249904.006	LB284033.004	Mercury	mg/kg	0.05	0.22	<0.05	0.2	104

OC Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249872.001	LB284019.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	100
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	105
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	100
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	74
			Endrin	mg/kg	0.2	0.2	<0.2	0.2	104
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	109
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
			Total OC VIC EPA	mg/kg	1	1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.11	0.11	-	74

OP Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249872.001	LB284019.004		Azinphos-methyl (Guthion)	mg/kg	0.2	2.9	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.2	<0.2	2	109
			Diazinon (Dimpylate)	mg/kg	0.5	2.3	<0.5	2	112
			Dichlorvos	mg/kg	0.5	1.3	<0.5	2	64
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	1.9	<0.2	2	93
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	10	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	101
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	98

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

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

QC Sample	Sample Number	Parameter	Units	LOR

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

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

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

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249877.012	LB284026.004	Arsenic, As	mg/kg	1	50	4	50	91
		Cadmium, Cd	mg/kg	0.3	40	<0.3	50	81
		Chromium, Cr	mg/kg	0.5	50	7.3	50	86
		Copper, Cu	mg/kg	0.5	58	13	50	89
		Nickel, Ni	mg/kg	0.5	48	5.5	50	85
		Lead, Pb	mg/kg	1	54	10	50	87
		Zinc, Zn	mg/kg	2	82	37	50	90
SE249904.006	LB284027.004	Arsenic, As	mg/kg	1	51	2	50	98
		Cadmium, Cd	mg/kg	0.3	45	<0.3	50	90
		Chromium, Cr	mg/kg	0.5	59	7.5	50	103
		Copper, Cu	mg/kg	0.5	53	1.3	50	104
		Nickel, Ni	mg/kg	0.5	52	1.0	50	102
		Lead, Pb	mg/kg	1	56	8	50	96
		Zinc, Zn	mg/kg	2	56	6	50	101

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249888.001	LB283919.004	Lead	µg/L	1	21	<1	20	104

VOC's in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249750A.001	LB283872.004	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	-	-
			1,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	-	-
			cis-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	-	-
			trans-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	-	-
			1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	<0.1	-	-
		Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	<1	-	-
			Chloromethane	mg/kg	1	<1	<1	-	-
			Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	<0.1	-	-
			Bromomethane	mg/kg	1	<1	<1	-	-
			Chloroethane	mg/kg	1	<1	<1	-	-
			Trichlorofluoromethane	mg/kg	1	<1	<1	-	-
			1,1-dichloroethene	mg/kg	0.1	4.0	<0.1	5	79
			Iodomethane	mg/kg	5	<5	<5	-	-
			Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	<0.5	-	-
			Allyl chloride	mg/kg	0.1	<0.1	<0.1	-	-
			trans-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	-	-
			1,1-dichloroethane	mg/kg	0.1	<0.1	<0.1	-	-
			cis-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	-	-
			Bromochloromethane	mg/kg	0.1	<0.1	<0.1	-	-
			1,2-dichloroethane	mg/kg	0.1	4.6	<0.1	5	92
			1,1,1-trichloroethane	mg/kg	0.1	<0.1	<0.1	-	-
			1,1-dichloropropene	mg/kg	0.1	<0.1	<0.1	-	-
			Carbon tetrachloride	mg/kg	0.1	<0.1	<0.1	-	-
			Dibromomethane	mg/kg	0.1	<0.1	<0.1	-	-
			Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	5.2	<0.1	5	105
			1,1,2-trichloroethane	mg/kg	0.1	<0.1	<0.1	-	-
			1,3-dichloropropane	mg/kg	0.1	<0.1	<0.1	-	-
			Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	<0.1	-	-
			1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	-	-
			1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	-	-
			1,2,3-trichloropropane	mg/kg	0.1	<0.1	<0.1	-	-
			trans-1,4-dichloro-2-butene	mg/kg	1	<1	<1	-	-
			1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobutadiene	mg/kg	0.1	<0.1	<0.1	-	-
		Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	4.8	<0.1	5	95
			Bromobenzene	mg/kg	0.1	<0.1	<0.1	-	-
			2-chlorotoluene	mg/kg	0.1	<0.1	<0.1	-	-
			4-chlorotoluene	mg/kg	0.1	<0.1	<0.1	-	-

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

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

VOC's in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249750A.001	LB283872.004	Halogenated Aromatics	1,3-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	-	-
			1,4-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	-	-
			1,2-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	-	-
			1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	-	-
			1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	-	-
		Monocyclic Aromatic	Benzene	mg/kg	0.1	5.1	<0.1	5	101
			Toluene	mg/kg	0.1	5.2	<0.1	5	104
			Ethylbenzene	mg/kg	0.1	4.7	<0.1	5	95
			m/p-xylene	mg/kg	0.2	9.2	<0.2	10	92
			Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	<0.1	-	-
			o-xylene	mg/kg	0.1	4.7	<0.1	5	93
			Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	<0.1	-	-
			n-propylbenzene	mg/kg	0.1	<0.1	<0.1	-	-
			1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	-	-
			tert-butylbenzene	mg/kg	0.1	<0.1	<0.1	-	-
			1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	-	-
			sec-butylbenzene	mg/kg	0.1	<0.1	<0.1	-	-
			p-isopropyltoluene	mg/kg	0.1	<0.1	<0.1	-	-
			n-butylbenzene	mg/kg	0.1	<0.1	<0.1	-	-
		Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	<0.1	<0.1	-	-
			2-nitropropane	mg/kg	10	<10	<10	-	-
		Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10	<10	-	-
			MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	<0.1	-	-
			Vinyl acetate*	mg/kg	10	<10	<10	-	-
			MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	<1	-	-
			2-hexanone (MBK)	mg/kg	5	<5	<5	-	-
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5	<0.5	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.3	9.8	10	113
			d8-toluene (Surrogate)	mg/kg	-	9.9	9.2	10	99
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.1	9.5	10	101
		Totals	Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	24	<1.8	-	-
			Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	24	<1.8	-	-
			Total BTEX*	mg/kg	0.6	29	<0.6	-	-
			Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	<3.0	<3.0	-	-
			Total VOC*	mg/kg	24	53	<24	-	-
			Total Xylenes*	mg/kg	0.3	14	<0.3	-	-
		Trihalomethanes	Chloroform (THM)	mg/kg	0.1	4.9	<0.1	5	97
			Bromodichloromethane (THM)	mg/kg	0.1	<0.1	<0.1	-	-
			Dibromochloromethane (THM)	mg/kg	0.1	<0.1	<0.1	-	-
			Bromoform (THM)	mg/kg	0.1	<0.1	<0.1	-	-

MATRIX SPIKE DUPLICATES

SE249904 R0

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

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

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

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

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

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

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

Appendix F.
Laboratory reports

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Julia Jasonsmith	Manager	Huong Crawford
Client	MURRANG EARTH SCIENCES PTY LTD	Laboratory	SGS Alexandria Environmental
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Project	**MES2167**	SGS Reference	**SE249904 R0**
Order Number	**MES2167**	Date Received	28 Jun 2023
Samples	24	Date Reported	06 Jul 2023

COMMENTS

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

Phenoxy Acid Herbicides subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420. Report No. ME335307.

SIGNATORIES

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Bennet LO
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Parameter	Units	LOR	Sample Number: SE249904.001 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Sample 1 0.1-0.25	SE249904.002 Soil 27 Jun 2023 Sample 1 0.3-0.4	SE249904.003 Soil 27 Jun 2023 Sample 2 0.1-0.25	SE249904.004 Soil 27 Jun 2023 Sample 2 0.1-0.2
VOC's in Soil Method: AN433 Tested: 28/6/2023						
Fumigants						
2,2-dichloropropane	mg/kg	0.1	<0.1	-	-	-
1,2-dichloropropane	mg/kg	0.1	<0.1	-	-	-
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	-	-	-
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	-	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	-	-	-
Halogenated Aliphatics						
Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	-	-	-
Chloromethane	mg/kg	1	<1	-	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	-	-	-
Bromomethane	mg/kg	1	<1	-	-	-
Chloroethane	mg/kg	1	<1	-	-	-
Trichlorofluoromethane	mg/kg	1	<1	-	-	-
1,1-dichloroethene	mg/kg	0.1	<0.1	-	-	-
Iodomethane	mg/kg	5	<5	-	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	-	-	-
Allyl chloride	mg/kg	0.1	<0.1	-	-	-
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	-	-	-
1,1-dichloroethane	mg/kg	0.1	<0.1	-	-	-
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	-	-	-
Bromochloromethane	mg/kg	0.1	<0.1	-	-	-
1,2-dichloroethane	mg/kg	0.1	<0.1	-	-	-
1,1,1-trichloroethane	mg/kg	0.1	<0.1	-	-	-
1,1-dichloropropene	mg/kg	0.1	<0.1	-	-	-
Carbon tetrachloride	mg/kg	0.1	<0.1	-	-	-
Dibromomethane	mg/kg	0.1	<0.1	-	-	-
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1	-	-	-
1,1,2-trichloroethane	mg/kg	0.1	<0.1	-	-	-
1,3-dichloropropane	mg/kg	0.1	<0.1	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	-	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	-	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	-	-	-
1,2,3-trichloropropane	mg/kg	0.1	<0.1	-	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	<1	-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	-	-	-
Hexachlorobutadiene	mg/kg	0.1	<0.1	-	-	-
Halogenated Aromatics						
Chlorobenzene	mg/kg	0.1	<0.1	-	-	-
Bromobenzene	mg/kg	0.1	<0.1	-	-	-
2-chlorotoluene	mg/kg	0.1	<0.1	-	-	-
4-chlorotoluene	mg/kg	0.1	<0.1	-	-	-
1,3-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-
1,4-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-
1,2-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	-	-	-
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	-	-	-
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	-	-	-
o-xylene	mg/kg	0.1	<0.1	-	-	-
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	-	-	-
n-propylbenzene	mg/kg	0.1	<0.1	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	-	-	-

Parameter	Units	LOR	Sample Number: SE249904.001 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Sample 1 0.1-0.25	SE249904.002 Soil 27 Jun 2023 Sample 1 0.3-0.4	SE249904.003 Soil 27 Jun 2023 Sample 2 0.1-0.25	SE249904.004 Soil 27 Jun 2023 Sample 2 0.1-0.2
VOC's in Soil Method: AN433 Tested: 30/6/2023 (continued)						
tert-butylbenzene	mg/kg	0.1	<0.1	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	-	-	-
sec-butylbenzene	mg/kg	0.1	<0.1	-	-	-
p-isopropyltoluene	mg/kg	0.1	<0.1	-	-	-
n-butylbenzene	mg/kg	0.1	<0.1	-	-	-
Nitrogenous Compounds						
Acrylonitrile	mg/kg	0.1	<0.1	-	-	-
2-nitropropane	mg/kg	10	<10	-	-	-
Oxygenated Compounds						
Acetone (2-propanone)	mg/kg	10	<10	-	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	-	-	-
Vinyl acetate*	mg/kg	10	<10	-	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	-	-	-
2-hexanone (MBK)	mg/kg	5	<5	-	-	-
Polycyclic VOCs						
Naphthalene (VOC)*	mg/kg	0.1	<0.1	-	-	-
Sulphonated Compounds						
Carbon disulfide	mg/kg	0.5	<0.5	-	-	-
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	**95**	-	-	-
d8-toluene (Surrogate)	%	-	**90**	-	-	-
Bromofluorobenzene (Surrogate)	%	-	**96**	-	-	-
Totals						
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	-	-	-
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	-	-	-
Total BTEX*	mg/kg	0.6	<0.6	-	-	-
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	<3.0	-	-	-
Total VOC*	mg/kg	24	<24	-	-	-
Total Xylenes*	mg/kg	0.3	<0.3	-	-	-

Parameter	Units	LOR	Sample Number: SE249904.001 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Sample 1 0.1-0.25	SE249904.002 Soil 27 Jun 2023 Sample 1 0.3-0.4	SE249904.003 Soil 27 Jun 2023 Sample 2 0.1-0.25	SE249904.004 Soil 27 Jun 2023 Sample 2 0.1-0.2
VOC's in Soil Method: AN433 Tested: 28/6/2023 (continued)						
Trihalomethanes						
Chloroform (THM)	mg/kg	0.1	<0.1	-	-	-
Bromodichloromethane (THM)	mg/kg	0.1	<0.1	-	-	-
Dibromochloromethane (THM)	mg/kg	0.1	<0.1	-	-	-
Bromoform (THM)	mg/kg	0.1	<0.1	-	-	-
OC Pesticides in Soil Method: AN420 Tested: 29/6/2023						
Alpha BHC	mg/kg	0.1	<0.1	-	-	-
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	-	-	-
Beta BHC	mg/kg	0.1	<0.1	-	-	-
Lindane (gamma BHC)	mg/kg	0.1	<0.1	-	-	-
Delta BHC	mg/kg	0.1	<0.1	-	-	-
Heptachlor	mg/kg	0.1	<0.1	-	-	-
Aldrin	mg/kg	0.1	<0.1	-	-	-
Isodrin	mg/kg	0.1	<0.1	-	-	-
Heptachlor epoxide	mg/kg	0.1	<0.1	-	-	-
Gamma Chlordane	mg/kg	0.1	<0.1	-	-	-
Alpha Chlordane	mg/kg	0.1	<0.1	-	-	-
Alpha Endosulfan	mg/kg	0.2	<0.2	-	-	-
o,p'-DDE*	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	-	-	-
o,p'-DDD*	mg/kg	0.1	<0.1	-	-	-
p,p'-DDD	mg/kg	0.1	<0.1	-	-	-
Endrin aldehyde	mg/kg	0.1	<0.1	-	-	-
Endosulfan sulphate	mg/kg	0.1	<0.1	-	-	-
o,p'-DDT*	mg/kg	0.1	<0.1	-	-	-
p,p'-DDT	mg/kg	0.1	<0.1	-	-	-
Endrin ketone	mg/kg	0.1	<0.1	-	-	-
Methoxychlor	mg/kg	0.1	<0.1	-	-	-
Mirex	mg/kg	0.1	<0.1	-	-	-
trans-Nonachlor	mg/kg	0.1	<0.1	-	-	-
Total CLP OC Pesticides	mg/kg	1	<1	-	-	-
Total OC VIC EPA	mg/kg	1	<1	-	-	-
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**74**	-	-	-
OP Pesticides in Soil Method: AN420 Tested: 29/6/2023						
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	-	-	-
Bromophos Ethyl	mg/kg	0.2	<0.2	-	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	-	-	-
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	-	-	-
Dichlorvos	mg/kg	0.5	<0.5	-	-	-
Dimethoate	mg/kg	0.5	<0.5	-	-	-
Ethion	mg/kg	0.2	<0.2	-	-	-
Fenitrothion	mg/kg	0.2	<0.2	-	-	-
Malathion	mg/kg	0.2	<0.2	-	-	-
Methidathion	mg/kg	0.5	<0.5	-	-	-
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	-	-	-
Total OP Pesticides*	mg/kg	1.7	<1.7	-	-	-
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	**102**	-	-	-
d14-p-terphenyl (Surrogate)	%	-	**98**	-	-	-

Parameter	Units	LOR	Sample Number: SE249904.001 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Sample 1 0.1-0.25	SE249904.002 Soil 27 Jun 2023 Sample 1 0.3-0.4	SE249904.003 Soil 27 Jun 2023 Sample 2 0.1-0.25	SE249904.004 Soil 27 Jun 2023 Sample 2 0.1-0.2
Triazines in Soil Method: AN420 Tested: 29/6/2023						
Simazine	mg/kg	0.5	<0.5	-	<0.5	-
Atrazine	mg/kg	0.5	<0.5	-	<0.5	-
Propazine	mg/kg	0.5	<0.5	-	<0.5	-
Terbuthylazine	mg/kg	0.5	<0.5	-	<0.5	-
Metribuzin	mg/kg	0.5	<0.5	-	<0.5	-
Prometryn	mg/kg	0.5	<0.5	-	<0.5	-
Terbutryn	mg/kg	0.5	<0.5	-	<0.5	-
Cyanazine	mg/kg	0.5	<0.5	-	<0.5	-
Hexazinone	mg/kg	1	<1	-	<1	-
Surrogates						
d14-p-terphenyl (Surrogate)	%	-	**94**	-	**94**	-
Synthetic Pyrethroids in Soil Method: AN420 Tested: 29/6/2023						
Surrogates						
d14-p-terphenyl (Surrogate)	%	-	**96**	-	**94**	-
Synthetic Pyrethroids						
Bifenthrin	mg/kg	0.5	<0.5	-	<0.5	-
cis-Permethrin	mg/kg	0.5	<0.5	-	<0.5	-
trans-Permethrin	mg/kg	0.5	<0.5	-	<0.5	-
Cyfluthrin	mg/kg	1	<1	-	<1	-
Cypermethrin	mg/kg	1	<1	-	<1	-
Esfenvalerate	mg/kg	0.5	<0.5	-	<0.5	-
Deltamethrin	mg/kg	0.5	<0.5	-	<0.5	-
Carbamates in Soil Method: AN420 Tested: 29/6/2023						
Carbamates						
Carbofuran	mg/kg	0.5	<0.5	-	<0.5	-
Carbaryl	mg/kg	0.5	<0.5	-	<0.5	-
Surrogates						
d14-p-terphenyl (Surrogate)	%	-	**96**	-	**94**	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE249904.001 Soil 27 Jun 2023 Sample 1 0.1-0.25	SE249904.002 Soil 27 Jun 2023 Sample 1 0.3-0.4	SE249904.003 Soil 27 Jun 2023 Sample 2 0.1-0.25	SE249904.004 Soil 27 Jun 2023 Sample 2 0.1-0.2
Pesticides / Herbicides in Soils by LC-MS/MS MA-1569.SL.01 Method: MA1569 Tested: 6/7/2023							
Bromoxynil*	mg/kg	0.5		<0.5	-	-	-
4-Chlorophenocy acetic acid (4-CPA)*	mg/kg	0.5		<0.5	-	-	-
Clopyralid*	mg/kg	0.5		<0.5	-	-	-
2,4-D [(2,4-Dichlorophenoxy) acetic acid]*	mg/kg	0.01		<0.01	-	-	-
2,4-DB*	mg/kg	0.5		<0.5	-	-	-
2,6-D*	mg/kg	0.5		<0.5	-	-	-
Dicamba*	mg/kg	0.01		<0.01	-	-	-
Dichloroprop / Dichlorprop-P*	mg/kg	0.01		<0.01	-	-	-
Dinoseb*	mg/kg	0.5		<0.5	-	-	-
Fluroxypyr*	mg/kg	0.5		<0.5	-	-	-
Ioxynil*	mg/kg	0.5		<0.5	-	-	-
MCPA*	mg/kg	0.01		<0.01	-	-	-
MCPB*	mg/kg	0.01		<0.01	-	-	-
mecoprop*	mg/kg	0.01		<0.01	-	-	-
Picloram*	mg/kg	0.01		<0.01	-	-	-
2,4,5-T*	mg/kg	0.01		<0.01	-	-	-
2,4,5-TP*	mg/kg	0.5		<0.5	-	-	-
2,4,6-Trichlorophenoxy acetic acid*	mg/kg	0.5		<0.5	-	-	-
Triclopyr*	mg/kg	0.01		<0.01	-	-	-
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 29/6/2023							
Arsenic, As	mg/kg	1		**1**	<1	**9**	**7**
Cadmium, Cd	mg/kg	0.3		<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5		**3.7**	**5.2**	**21**	**14**
Copper, Cu	mg/kg	0.5		**4.0**	**0.9**	**4.5**	**5.9**
Nickel, Ni	mg/kg	0.5		**0.6**	**0.5**	**8.6**	**4.7**
Lead, Pb	mg/kg	1		**10**	**5**	**15**	**16**
Zinc, Zn	mg/kg	2		**17**	**3**	**16**	**22**
Mercury in Soil Method: AN312 Tested: 29/6/2023							
Mercury	mg/kg	0.05		<0.05	<0.05	<0.05	<0.05
Moisture Content Method: AN002 Tested: 30/6/2023							
% Moisture	%w/w	1		**16.1**	**8.9**	**27.1**	**22.4**
Trace Metals (Dissolved) in Water by ICPMS Method: AN318 Tested: 29/6/2023							
Arsenic	µg/L	1		-	-	-	-
Cadmium	µg/L	0.1		-	-	-	-
Chromium	µg/L	1		-	-	-	-
Copper	µg/L	1		-	-	-	-
Lead	µg/L	1		-	-	-	-
Nickel	µg/L	1		-	-	-	-
Zinc	µg/L	5		-	-	-	-
Mercury (dissolved) in Water Method: AN311(Perth)/AN312 Tested: 4/7/2023							
Mercury	mg/L	0.0001		-	-	-	-

Parameter	Units	LOR	Sample Number: SE249904.005 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Sample 3 0.1-0.2	SE249904.006 Soil 27 Jun 2023 Sample 3 0.2-0.3	SE249904.007 Soil 27 Jun 2023 Sample 4 0.1-0.15	SE249904.008 Soil 27 Jun 2023 Sample 4 0.2-0.3
VOC's in Soil Method: AN433 Tested: 28/6/2023						
Fumigants						
2,2-dichloropropane	mg/kg	0.1	<0.1	-	-	-
1,2-dichloropropane	mg/kg	0.1	<0.1	-	-	-
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	-	-	-
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	-	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	-	-	-
Halogenated Aliphatics						
Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	-	-	-
Chloromethane	mg/kg	1	<1	-	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	-	-	-
Bromomethane	mg/kg	1	<1	-	-	-
Chloroethane	mg/kg	1	<1	-	-	-
Trichlorofluoromethane	mg/kg	1	<1	-	-	-
1,1-dichloroethene	mg/kg	0.1	<0.1	-	-	-
Iodomethane	mg/kg	5	<5	-	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	-	-	-
Allyl chloride	mg/kg	0.1	<0.1	-	-	-
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	-	-	-
1,1-dichloroethane	mg/kg	0.1	<0.1	-	-	-
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	-	-	-
Bromochloromethane	mg/kg	0.1	<0.1	-	-	-
1,2-dichloroethane	mg/kg	0.1	<0.1	-	-	-
1,1,1-trichloroethane	mg/kg	0.1	<0.1	-	-	-
1,1-dichloropropene	mg/kg	0.1	<0.1	-	-	-
Carbon tetrachloride	mg/kg	0.1	<0.1	-	-	-
Dibromomethane	mg/kg	0.1	<0.1	-	-	-
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1	-	-	-
1,1,2-trichloroethane	mg/kg	0.1	<0.1	-	-	-
1,3-dichloropropane	mg/kg	0.1	<0.1	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	-	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	-	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	-	-	-
1,2,3-trichloropropane	mg/kg	0.1	<0.1	-	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	<1	-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	-	-	-
Hexachlorobutadiene	mg/kg	0.1	<0.1	-	-	-
Halogenated Aromatics						
Chlorobenzene	mg/kg	0.1	<0.1	-	-	-
Bromobenzene	mg/kg	0.1	<0.1	-	-	-
2-chlorotoluene	mg/kg	0.1	<0.1	-	-	-
4-chlorotoluene	mg/kg	0.1	<0.1	-	-	-
1,3-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-
1,4-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-
1,2-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	-	-	-
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	-	-	-
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	-	-	-
o-xylene	mg/kg	0.1	<0.1	-	-	-
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	-	-	-
n-propylbenzene	mg/kg	0.1	<0.1	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE249904.005 Soil 27 Jun 2023 Sample 3 0.1-0.2	SE249904.006 Soil 27 Jun 2023 Sample 3 0.2-0.3	SE249904.007 Soil 27 Jun 2023 Sample 4 0.1-0.15	SE249904.008 Soil 27 Jun 2023 Sample 4 0.2-0.3
VOC's in Soil Method: AN433 Tested: 30/6/2023 (continued)						
tert-butylbenzene	mg/kg	0.1	<0.1	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	-	-	-
sec-butylbenzene	mg/kg	0.1	<0.1	-	-	-
p-isopropyltoluene	mg/kg	0.1	<0.1	-	-	-
n-butylbenzene	mg/kg	0.1	<0.1	-	-	-
Nitrogenous Compounds						
Acrylonitrile	mg/kg	0.1	<0.1	-	-	-
2-nitropropane	mg/kg	10	<10	-	-	-
Oxygenated Compounds						
Acetone (2-propanone)	mg/kg	10	<10	-	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	-	-	-
Vinyl acetate*	mg/kg	10	<10	-	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	-	-	-
2-hexanone (MBK)	mg/kg	5	<5	-	-	-
Polycyclic VOCs						
Naphthalene (VOC)*	mg/kg	0.1	<0.1	-	-	-
Sulphonated Compounds						
Carbon disulfide	mg/kg	0.5	<0.5	-	-	-
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	**81**	-	-	-
d8-toluene (Surrogate)	%	-	**95**	-	-	-
Bromofluorobenzene (Surrogate)	%	-	**95**	-	-	-
Totals						
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	-	-	-
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	-	-	-
Total BTEX*	mg/kg	0.6	<0.6	-	-	-
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	<3.0	-	-	-
Total VOC*	mg/kg	24	<24	-	-	-
Total Xylenes*	mg/kg	0.3	<0.3	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE249904.005 Soil 27 Jun 2023 Sample 3 0.1-0.2	SE249904.006 Soil 27 Jun 2023 Sample 3 0.2-0.3	SE249904.007 Soil 27 Jun 2023 Sample 4 0.1-0.15	SE249904.008 Soil 27 Jun 2023 Sample 4 0.2-0.3
VOC's in Soil Method: AN433 Tested: 28/6/2023 (continued)						
Trihalomethanes						
Chloroform (THM)	mg/kg	0.1	<0.1	-	-	-
Bromodichloromethane (THM)	mg/kg	0.1	<0.1	-	-	-
Dibromochloromethane (THM)	mg/kg	0.1	<0.1	-	-	-
Bromoform (THM)	mg/kg	0.1	<0.1	-	-	-
OC Pesticides in Soil Method: AN420 Tested: 29/6/2023						
Alpha BHC	mg/kg	0.1	<0.1	-	-	-
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	-	-	-
Beta BHC	mg/kg	0.1	<0.1	-	-	-
Lindane (gamma BHC)	mg/kg	0.1	<0.1	-	-	-
Delta BHC	mg/kg	0.1	<0.1	-	-	-
Heptachlor	mg/kg	0.1	<0.1	-	-	-
Aldrin	mg/kg	0.1	<0.1	-	-	-
Isodrin	mg/kg	0.1	<0.1	-	-	-
Heptachlor epoxide	mg/kg	0.1	<0.1	-	-	-
Gamma Chlordane	mg/kg	0.1	<0.1	-	-	-
Alpha Chlordane	mg/kg	0.1	<0.1	-	-	-
Alpha Endosulfan	mg/kg	0.2	<0.2	-	-	-
o,p'-DDE*	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	-	-	-
o,p'-DDD*	mg/kg	0.1	<0.1	-	-	-
p,p'-DDD	mg/kg	0.1	<0.1	-	-	-
Endrin aldehyde	mg/kg	0.1	<0.1	-	-	-
Endosulfan sulphate	mg/kg	0.1	<0.1	-	-	-
o,p'-DDT*	mg/kg	0.1	<0.1	-	-	-
p,p'-DDT	mg/kg	0.1	<0.1	-	-	-
Endrin ketone	mg/kg	0.1	<0.1	-	-	-
Methoxychlor	mg/kg	0.1	<0.1	-	-	-
Mirex	mg/kg	0.1	<0.1	-	-	-
trans-Nonachlor	mg/kg	0.1	<0.1	-	-	-
Total CLP OC Pesticides	mg/kg	1	<1	-	-	-
Total OC VIC EPA	mg/kg	1	<1	-	-	-
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**85**	-	-	-
OP Pesticides in Soil Method: AN420 Tested: 29/6/2023						
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	-	-	-
Bromophos Ethyl	mg/kg	0.2	<0.2	-	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	-	-	-
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	-	-	-
Dichlorvos	mg/kg	0.5	<0.5	-	-	-
Dimethoate	mg/kg	0.5	<0.5	-	-	-
Ethion	mg/kg	0.2	<0.2	-	-	-
Fenitrothion	mg/kg	0.2	<0.2	-	-	-
Malathion	mg/kg	0.2	<0.2	-	-	-
Methidathion	mg/kg	0.5	<0.5	-	-	-
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	-	-	-
Total OP Pesticides*	mg/kg	1.7	<1.7	-	-	-
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	**98**	-	-	-
d14-p-terphenyl (Surrogate)	%	-	**97**	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE249904.005 Soil 27 Jun 2023 Sample 3 0.1-0.2	SE249904.006 Soil 27 Jun 2023 Sample 3 0.2-0.3	SE249904.007 Soil 27 Jun 2023 Sample 4 0.1-0.15	SE249904.008 Soil 27 Jun 2023 Sample 4 0.2-0.3
Triazines in Soil Method: AN420 Tested: 29/6/2023						
Simazine	mg/kg	0.5	<0.5	-	<0.5	-
Atrazine	mg/kg	0.5	<0.5	-	<0.5	-
Propazine	mg/kg	0.5	<0.5	-	<0.5	-
Terbuthylazine	mg/kg	0.5	<0.5	-	<0.5	-
Metribuzin	mg/kg	0.5	<0.5	-	<0.5	-
Prometryn	mg/kg	0.5	<0.5	-	<0.5	-
Terbutryn	mg/kg	0.5	<0.5	-	<0.5	-
Cyanazine	mg/kg	0.5	<0.5	-	<0.5	-
Hexazinone	mg/kg	1	<1	-	<1	-
Surrogates						
d14-p-terphenyl (Surrogate)	%	-	**90**	-	**92**	-
Synthetic Pyrethroids in Soil Method: AN420 Tested: 29/6/2023						
Surrogates						
d14-p-terphenyl (Surrogate)	%	-	**94**	-	**92**	-
Synthetic Pyrethroids						
Bifenthrin	mg/kg	0.5	<0.5	-	<0.5	-
cis-Permethrin	mg/kg	0.5	<0.5	-	<0.5	-
trans-Permethrin	mg/kg	0.5	<0.5	-	<0.5	-
Cyfluthrin	mg/kg	1	<1	-	<1	-
Cypermethrin	mg/kg	1	<1	-	<1	-
Esfenvalerate	mg/kg	0.5	<0.5	-	<0.5	-
Deltamethrin	mg/kg	0.5	<0.5	-	<0.5	-
Carbamates in Soil Method: AN420 Tested: 29/6/2023						
Carbamates						
Carbofuran	mg/kg	0.5	<0.5	-	<0.5	-
Carbaryl	mg/kg	0.5	<0.5	-	<0.5	-
Surrogates						
d14-p-terphenyl (Surrogate)	%	-	**94**	-	**92**	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE249904.005 Soil 27 Jun 2023 Sample 3 0.1-0.2	SE249904.006 Soil 27 Jun 2023 Sample 3 0.2-0.3	SE249904.007 Soil 27 Jun 2023 Sample 4 0.1-0.15	SE249904.008 Soil 27 Jun 2023 Sample 4 0.2-0.3
Pesticides / Herbicides in Soils by LC-MS/MS MA-1569.SL.01 Method: MA1569 Tested: 6/7/2023						
Bromoxynil*	mg/kg	0.5	<0.5	-	-	-
4-Chlorophenocy acetic acid (4-CPA)*	mg/kg	0.5	<0.5	-	-	-
Clopyralid*	mg/kg	0.5	<0.5	-	-	-
2,4-D [(2,4-Dichlorophenoxy) acetic acid]*	mg/kg	0.01	<0.01	-	-	-
2,4-DB*	mg/kg	0.5	<0.5	-	-	-
2,6-D*	mg/kg	0.5	<0.5	-	-	-
Dicamba*	mg/kg	0.01	<0.01	-	-	-
Dichloroprop / Dichlorprop-P*	mg/kg	0.01	<0.01	-	-	-
Dinoseb*	mg/kg	0.5	<0.5	-	-	-
Fluroxypyr*	mg/kg	0.5	<0.5	-	-	-
Ioxynil*	mg/kg	0.5	<0.5	-	-	-
MCPA*	mg/kg	0.01	<0.01	-	-	-
MCPB*	mg/kg	0.01	<0.01	-	-	-
mecoprop*	mg/kg	0.01	<0.01	-	-	-
Picloram*	mg/kg	0.01	<0.01	-	-	-
2,4,5-T*	mg/kg	0.01	<0.01	-	-	-
2,4,5-TP*	mg/kg	0.5	<0.5	-	-	-
2,4,6-Trichlorophenoxy acetic acid*	mg/kg	0.5	<0.5	-	-	-
Triclopyr*	mg/kg	0.01	<0.01	-	-	-
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 29/6/2023						
Arsenic, As	mg/kg	1	**1**	**2**	**1**	**1**
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	**7.0**	**7.5**	**8.9**	**5.8**
Copper, Cu	mg/kg	0.5	**3.5**	**1.3**	**3.7**	**3.2**
Nickel, Ni	mg/kg	0.5	**1.0**	**1.0**	**0.9**	**0.8**
Lead, Pb	mg/kg	1	**10**	**8**	**11**	**9**
Zinc, Zn	mg/kg	2	**13**	**6**	**18**	**9**
Mercury in Soil Method: AN312 Tested: 29/6/2023						
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content Method: AN002 Tested: 30/6/2023						
% Moisture	%w/w	1	**23.9**	**13.9**	**14.4**	**11.9**
Trace Metals (Dissolved) in Water by ICPMS Method: AN318 Tested: 29/6/2023						
Arsenic	µg/L	1	-	-	-	-
Cadmium	µg/L	0.1	-	-	-	-
Chromium	µg/L	1	-	-	-	-
Copper	µg/L	1	-	-	-	-
Lead	µg/L	1	-	-	-	-
Nickel	µg/L	1	-	-	-	-
Zinc	µg/L	5	-	-	-	-
Mercury (dissolved) in Water Method: AN311(Perth)/AN312 Tested: 4/7/2023						
Mercury	mg/L	0.0001	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE249904.009 Soil 27 Jun 2023 Sample 5 0.1-0.4	SE249904.010 Soil 27 Jun 2023 Sample 5 0.3-0.4	SE249904.011 Soil 27 Jun 2023 QC1	SE249904.012 Soil 27 Jun 2023 QC2
VOC's in Soil Method: AN433 Tested: 30/6/2023							
Fumigants							
2,2-dichloropropane	mg/kg	0.1		-	-	-	-
1,2-dichloropropane	mg/kg	0.1		-	-	-	-
cis-1,3-dichloropropene	mg/kg	0.1		-	-	-	-
trans-1,3-dichloropropene	mg/kg	0.1		-	-	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1		-	-	-	-
Halogenated Aliphatics							
Dichlorodifluoromethane (CFC-12)	mg/kg	1		-	-	-	-
Chloromethane	mg/kg	1		-	-	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1		-	-	-	-
Bromomethane	mg/kg	1		-	-	-	-
Chloroethane	mg/kg	1		-	-	-	-
Trichlorofluoromethane	mg/kg	1		-	-	-	-
1,1-dichloroethene	mg/kg	0.1		-	-	-	-
Iodomethane	mg/kg	5		-	-	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5		-	-	-	-
Allyl chloride	mg/kg	0.1		-	-	-	-
trans-1,2-dichloroethene	mg/kg	0.1		-	-	-	-
1,1-dichloroethane	mg/kg	0.1		-	-	-	-
cis-1,2-dichloroethene	mg/kg	0.1		-	-	-	-
Bromochloromethane	mg/kg	0.1		-	-	-	-
1,2-dichloroethane	mg/kg	0.1		-	-	-	-
1,1,1-trichloroethane	mg/kg	0.1		-	-	-	-
1,1-dichloropropene	mg/kg	0.1		-	-	-	-
Carbon tetrachloride	mg/kg	0.1		-	-	-	-
Dibromomethane	mg/kg	0.1		-	-	-	-
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1		-	-	-	-
1,1,2-trichloroethane	mg/kg	0.1		-	-	-	-
1,3-dichloropropane	mg/kg	0.1		-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1		-	-	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1		-	-	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1		-	-	-	-
1,2,3-trichloropropane	mg/kg	0.1		-	-	-	-
trans-1,4-dichloro-2-butene	mg/kg	1		-	-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1		-	-	-	-
Hexachlorobutadiene	mg/kg	0.1		-	-	-	-
Halogenated Aromatics							
Chlorobenzene	mg/kg	0.1		-	-	-	-
Bromobenzene	mg/kg	0.1		-	-	-	-
2-chlorotoluene	mg/kg	0.1		-	-	-	-
4-chlorotoluene	mg/kg	0.1		-	-	-	-
1,3-dichlorobenzene	mg/kg	0.1		-	-	-	-
1,4-dichlorobenzene	mg/kg	0.1		-	-	-	-
1,2-dichlorobenzene	mg/kg	0.1		-	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.1		-	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.1		-	-	-	-
Monocyclic Aromatic Hydrocarbons							
Benzene	mg/kg	0.1		-	-	-	-
Toluene	mg/kg	0.1		-	-	-	-
Ethylbenzene	mg/kg	0.1		-	-	-	-
m/p-xylene	mg/kg	0.2		-	-	-	-
Styrene (Vinyl benzene)	mg/kg	0.1		-	-	-	-
o-xylene	mg/kg	0.1		-	-	-	-
Isopropylbenzene (Cumene)	mg/kg	0.1		-	-	-	-
n-propylbenzene	mg/kg	0.1		-	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.1		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE249904.009 Soil 27 Jun 2023 Sample 5 0.1-0.4	SE249904.010 Soil 27 Jun 2023 Sample 5 0.3-0.4	SE249904.011 Soil 27 Jun 2023 QC1	SE249904.012 Soil 27 Jun 2023 QC2
VOC's in Soil Method: AN433 Tested: 30/6/2023 (continued)						
tert-butylbenzene	mg/kg	0.1	-	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-	-	-
sec-butylbenzene	mg/kg	0.1	-	-	-	-
p-isopropyltoluene	mg/kg	0.1	-	-	-	-
n-butylbenzene	mg/kg	0.1	-	-	-	-
Nitrogenous Compounds						
Acrylonitrile	mg/kg	0.1	-	-	-	-
2-nitropropane	mg/kg	10	-	-	-	-
Oxygenated Compounds						
Acetone (2-propanone)	mg/kg	10	-	-	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-	-	-
Vinyl acetate*	mg/kg	10	-	-	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-	-	-
2-hexanone (MBK)	mg/kg	5	-	-	-	-
Polycyclic VOCs						
Naphthalene (VOC)*	mg/kg	0.1	-	-	-	-
Sulphonated Compounds						
Carbon disulfide	mg/kg	0.5	-	-	-	-
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-
Totals						
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	-	-	-	-
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	-	-	-	-
Total BTEX*	mg/kg	0.6	-	-	-	-
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	-	-	-	-
Total VOC*	mg/kg	24	-	-	-	-
Total Xylenes*	mg/kg	0.3	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE249904.009 Soil 27 Jun 2023 Sample 5 0.1-0.4	SE249904.010 Soil 27 Jun 2023 Sample 5 0.3-0.4	SE249904.011 Soil 27 Jun 2023 QC1	SE249904.012 Soil 27 Jun 2023 QC2
VOC's in Soil Method: AN433 Tested: 30/6/2023 (continued)						
Trihalomethanes						
Chloroform (THM)	mg/kg	0.1	-	-	-	-
Bromodichloromethane (THM)	mg/kg	0.1	-	-	-	-
Dibromochloromethane (THM)	mg/kg	0.1	-	-	-	-
Bromoform (THM)	mg/kg	0.1	-	-	-	-
OC Pesticides in Soil Method: AN420 Tested: 4/7/2023						
Alpha BHC	mg/kg	0.1	-	-	-	-
Hexachlorobenzene (HCB)	mg/kg	0.1	-	-	-	-
Beta BHC	mg/kg	0.1	-	-	-	-
Lindane (gamma BHC)	mg/kg	0.1	-	-	-	-
Delta BHC	mg/kg	0.1	-	-	-	-
Heptachlor	mg/kg	0.1	-	-	-	-
Aldrin	mg/kg	0.1	-	-	-	-
Isodrin	mg/kg	0.1	-	-	-	-
Heptachlor epoxide	mg/kg	0.1	-	-	-	-
Gamma Chlordane	mg/kg	0.1	-	-	-	-
Alpha Chlordane	mg/kg	0.1	-	-	-	-
Alpha Endosulfan	mg/kg	0.2	-	-	-	-
o,p'-DDE*	mg/kg	0.1	-	-	-	-
p,p'-DDE	mg/kg	0.1	-	-	-	-
Dieldrin	mg/kg	0.2	-	-	-	-
Endrin	mg/kg	0.2	-	-	-	-
Beta Endosulfan	mg/kg	0.2	-	-	-	-
o,p'-DDD*	mg/kg	0.1	-	-	-	-
p,p'-DDD	mg/kg	0.1	-	-	-	-
Endrin aldehyde	mg/kg	0.1	-	-	-	-
Endosulfan sulphate	mg/kg	0.1	-	-	-	-
o,p'-DDT*	mg/kg	0.1	-	-	-	-
p,p'-DDT	mg/kg	0.1	-	-	-	-
Endrin ketone	mg/kg	0.1	-	-	-	-
Methoxychlor	mg/kg	0.1	-	-	-	-
Mirex	mg/kg	0.1	-	-	-	-
trans-Nonachlor	mg/kg	0.1	-	-	-	-
Total CLP OC Pesticides	mg/kg	1	-	-	-	-
Total OC VIC EPA	mg/kg	1	-	-	-	-
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	-	-	-	-
OP Pesticides in Soil Method: AN420 Tested: 5/7/2023						
Azinphos-methyl (Guthion)	mg/kg	0.2	-	-	-	-
Bromophos Ethyl	mg/kg	0.2	-	-	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	-	-	-	-
Diazinon (Dimpylate)	mg/kg	0.5	-	-	-	-
Dichlorvos	mg/kg	0.5	-	-	-	-
Dimethoate	mg/kg	0.5	-	-	-	-
Ethion	mg/kg	0.2	-	-	-	-
Fenitrothion	mg/kg	0.2	-	-	-	-
Malathion	mg/kg	0.2	-	-	-	-
Methidathion	mg/kg	0.5	-	-	-	-
Parathion-ethyl (Parathion)	mg/kg	0.2	-	-	-	-
Total OP Pesticides*	mg/kg	1.7	-	-	-	-
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	-	-	-	-
d14-p-terphenyl (Surrogate)	%	-	-	-	-	-

Parameter	Units	LOR	Sample Number: SE249904.009 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Sample 5 0.1-0.4	SE249904.010 Soil 27 Jun 2023 Sample 5 0.3-0.4	SE249904.011 Soil 27 Jun 2023 QC1	SE249904.012 Soil 27 Jun 2023 QC2
Triazines in Soil Method: AN420 Tested: 29/6/2023						
Simazine	mg/kg	0.5	<0.5	-	<0.5	<0.5
Atrazine	mg/kg	0.5	<0.5	-	<0.5	<0.5
Propazine	mg/kg	0.5	<0.5	-	<0.5	<0.5
Terbuthylazine	mg/kg	0.5	<0.5	-	<0.5	<0.5
Metribuzin	mg/kg	0.5	<0.5	-	<0.5	<0.5
Prometryn	mg/kg	0.5	<0.5	-	<0.5	<0.5
Terbutryn	mg/kg	0.5	<0.5	-	<0.5	<0.5
Cyanazine	mg/kg	0.5	<0.5	-	<0.5	<0.5
Hexazinone	mg/kg	1	<1	-	<1	<1
Surrogates						
d14-p-terphenyl (Surrogate)	%	-	**94**	-	**94**	**94**
Synthetic Pyrethroids in Soil Method: AN420 Tested: 29/6/2023						
Surrogates						
d14-p-terphenyl (Surrogate)	%	-	**96**	-	-	-
Synthetic Pyrethroids						
Bifenthrin	mg/kg	0.5	<0.5	-	-	-
cis-Permethrin	mg/kg	0.5	<0.5	-	-	-
trans-Permethrin	mg/kg	0.5	<0.5	-	-	-
Cyfluthrin	mg/kg	1	<1	-	-	-
Cypermethrin	mg/kg	1	<1	-	-	-
Esfenvalerate	mg/kg	0.5	<0.5	-	-	-
Deltamethrin	mg/kg	0.5	<0.5	-	-	-
Carbamates in Soil Method: AN420 Tested: 29/6/2023						
Carbamates						
Carbofuran	mg/kg	0.5	<0.5	-	<0.5	<0.5
Carbaryl	mg/kg	0.5	<0.5	-	<0.5	<0.5
Surrogates						
d14-p-terphenyl (Surrogate)	%	-	**96**	-	**96**	**94**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE249904.009 Soil 27 Jun 2023 Sample 5 0.1-0.4	SE249904.010 Soil 27 Jun 2023 Sample 5 0.3-0.4	SE249904.011 Soil 27 Jun 2023 QC1	SE249904.012 Soil 27 Jun 2023 QC2
Pesticides / Herbicides in Soils by LC-MS/MS MA-1569.SL.01 Method: MA1569 Tested: 6/7/2023						
Bromoxynil*	mg/kg	0.5	-	-	-	-
4-Chlorophenocy acetic acid (4-CPA)*	mg/kg	0.5	-	-	-	-
Clopyralid*	mg/kg	0.5	-	-	-	-
2,4-D [(2,4-Dichlorophenoxy) acetic acid]*	mg/kg	0.01	-	-	-	-
2,4-DB*	mg/kg	0.5	-	-	-	-
2,6-D*	mg/kg	0.5	-	-	-	-
Dicamba*	mg/kg	0.01	-	-	-	-
Dichloroprop / Dichlorprop-P*	mg/kg	0.01	-	-	-	-
Dinoseb*	mg/kg	0.5	-	-	-	-
Fluroxypyr*	mg/kg	0.5	-	-	-	-
Ioxynil*	mg/kg	0.5	-	-	-	-
MCPA*	mg/kg	0.01	-	-	-	-
MCPB*	mg/kg	0.01	-	-	-	-
mecoprop*	mg/kg	0.01	-	-	-	-
Picloram*	mg/kg	0.01	-	-	-	-
2,4,5-T*	mg/kg	0.01	-	-	-	-
2,4,5-TP*	mg/kg	0.5	-	-	-	-
2,4,6-Trichlorophenoxy acetic acid*	mg/kg	0.5	-	-	-	-
Triclopyr*	mg/kg	0.01	-	-	-	-
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 29/6/2023						
Arsenic, As	mg/kg	1	**5**	**4**	**1**	**1**
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	**4.8**	**4.5**	**5.2**	**4.1**
Copper, Cu	mg/kg	0.5	**6.1**	**1.3**	**3.9**	**4.2**
Nickel, Ni	mg/kg	0.5	**1.3**	**0.9**	**0.7**	**0.7**
Lead, Pb	mg/kg	1	**15**	**8**	**9**	**10**
Zinc, Zn	mg/kg	2	**19**	**3**	**14**	**17**
Mercury in Soil Method: AN312 Tested: 29/6/2023						
Mercury	mg/kg	0.05	<0.05	**0.12**	<0.05	<0.05
Moisture Content Method: AN002 Tested: 30/6/2023						
% Moisture	%w/w	1	**16.7**	**12.7**	**14.5**	**14.2**
Trace Metals (Dissolved) in Water by ICPMS Method: AN318 Tested: 29/6/2023						
Arsenic	µg/L	1	-	-	-	-
Cadmium	µg/L	0.1	-	-	-	-
Chromium	µg/L	1	-	-	-	-
Copper	µg/L	1	-	-	-	-
Lead	µg/L	1	-	-	-	-
Nickel	µg/L	1	-	-	-	-
Zinc	µg/L	5	-	-	-	-
Mercury (dissolved) in Water Method: AN311(Perth)/AN312 Tested: 4/7/2023						
Mercury	mg/L	0.0001	-	-	-	-

Parameter	Units	LOR	Sample Number: SE249904.013 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Rinsate	Sample Number: SE249904.014 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Sample 6 0.1-0.2	Sample Number: SE249904.015 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Sample 6 0.2-0.3	Sample Number: SE249904.016 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Sample 7 0.1-0.2
VOC's in Soil Method: AN433 Tested: 30/6/2023						
Fumigants						
2,2-dichloropropane	mg/kg	0.1	-	<0.1	-	-
1,2-dichloropropane	mg/kg	0.1	-	<0.1	-	-
cis-1,3-dichloropropene	mg/kg	0.1	-	<0.1	-	-
trans-1,3-dichloropropene	mg/kg	0.1	-	<0.1	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	<0.1	-	-
Halogenated Aliphatics						
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	<1	-	-
Chloromethane	mg/kg	1	-	<1	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	<0.1	-	-
Bromomethane	mg/kg	1	-	<1	-	-
Chloroethane	mg/kg	1	-	<1	-	-
Trichlorofluoromethane	mg/kg	1	-	<1	-	-
1,1-dichloroethene	mg/kg	0.1	-	<0.1	-	-
Iodomethane	mg/kg	5	-	<5	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	<0.5	-	-
Allyl chloride	mg/kg	0.1	-	<0.1	-	-
trans-1,2-dichloroethene	mg/kg	0.1	-	<0.1	-	-
1,1-dichloroethane	mg/kg	0.1	-	<0.1	-	-
cis-1,2-dichloroethene	mg/kg	0.1	-	<0.1	-	-
Bromochloromethane	mg/kg	0.1	-	<0.1	-	-
1,2-dichloroethane	mg/kg	0.1	-	<0.1	-	-
1,1,1-trichloroethane	mg/kg	0.1	-	<0.1	-	-
1,1-dichloropropene	mg/kg	0.1	-	<0.1	-	-
Carbon tetrachloride	mg/kg	0.1	-	<0.1	-	-
Dibromomethane	mg/kg	0.1	-	<0.1	-	-
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	-	<0.1	-	-
1,1,2-trichloroethane	mg/kg	0.1	-	<0.1	-	-
1,3-dichloropropane	mg/kg	0.1	-	<0.1	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	<0.1	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	<0.1	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	<0.1	-	-
1,2,3-trichloropropane	mg/kg	0.1	-	<0.1	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	<1	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	<0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	-	<0.1	-	-
Halogenated Aromatics						
Chlorobenzene	mg/kg	0.1	-	<0.1	-	-
Bromobenzene	mg/kg	0.1	-	<0.1	-	-
2-chlorotoluene	mg/kg	0.1	-	<0.1	-	-
4-chlorotoluene	mg/kg	0.1	-	<0.1	-	-
1,3-dichlorobenzene	mg/kg	0.1	-	<0.1	-	-
1,4-dichlorobenzene	mg/kg	0.1	-	<0.1	-	-
1,2-dichlorobenzene	mg/kg	0.1	-	<0.1	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	<0.1	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	<0.1	-	-
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	-	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	<0.1	-	-
o-xylene	mg/kg	0.1	-	<0.1	-	-
Isopropylbenzene (Cumene)	mg/kg	0.1	-	<0.1	-	-
n-propylbenzene	mg/kg	0.1	-	<0.1	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	<0.1	-	-

Parameter	Units	LOR	Sample Number: SE249904.013 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Rinsate	Sample Number: SE249904.014 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Sample 6 0.1-0.2	Sample Number: SE249904.015 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Sample 6 0.2-0.3	Sample Number: SE249904.016 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Sample 7 0.1-0.2
VOC's in Soil Method: AN433 Tested: 30/6/2023 (continued)						
tert-butylbenzene	mg/kg	0.1	-	<0.1	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	<0.1	-	-
sec-butylbenzene	mg/kg	0.1	-	<0.1	-	-
p-isopropyltoluene	mg/kg	0.1	-	<0.1	-	-
n-butylbenzene	mg/kg	0.1	-	<0.1	-	-
Nitrogenous Compounds						
Acrylonitrile	mg/kg	0.1	-	<0.1	-	-
2-nitropropane	mg/kg	10	-	<10	-	-
Oxygenated Compounds						
Acetone (2-propanone)	mg/kg	10	-	<10	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	<0.1	-	-
Vinyl acetate*	mg/kg	10	-	<10	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	<1	-	-
2-hexanone (MBK)	mg/kg	5	-	<5	-	-
Polycyclic VOCs						
Naphthalene (VOC)*	mg/kg	0.1	-	<0.1	-	-
Sulphonated Compounds						
Carbon disulfide	mg/kg	0.5	-	<0.5	-	-
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	-	**93**	-	-
d8-toluene (Surrogate)	%	-	-	**108**	-	-
Bromofluorobenzene (Surrogate)	%	-	-	**83**	-	-
Totals						
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	-	<1.8	-	-
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	-	<1.8	-	-
Total BTEX*	mg/kg	0.6	-	<0.6	-	-
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	-	<3.0	-	-
Total VOC*	mg/kg	24	-	<24	-	-
Total Xylenes*	mg/kg	0.3	-	<0.3	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE249904.013 Soil 27 Jun 2023 Rinsate	SE249904.014 Soil 27 Jun 2023 Sample 6 0.1-0.2	SE249904.015 Soil 27 Jun 2023 Sample 6 0.2-0.3	SE249904.016 Soil 27 Jun 2023 Sample 7 0.1-0.2
VOC's in Soil Method: AN433 Tested: 30/6/2023 (continued)						
Trihalomethanes						
Chloroform (THM)	mg/kg	0.1	-	<0.1	-	-
Bromodichloromethane (THM)	mg/kg	0.1	-	<0.1	-	-
Dibromochloromethane (THM)	mg/kg	0.1	-	<0.1	-	-
Bromoform (THM)	mg/kg	0.1	-	<0.1	-	-
OC Pesticides in Soil Method: AN420 Tested: 4/7/2023						
Alpha BHC	mg/kg	0.1	-	<0.1	-	-
Hexachlorobenzene (HCB)	mg/kg	0.1	-	<0.1	-	-
Beta BHC	mg/kg	0.1	-	<0.1	-	-
Lindane (gamma BHC)	mg/kg	0.1	-	<0.1	-	-
Delta BHC	mg/kg	0.1	-	<0.1	-	-
Heptachlor	mg/kg	0.1	-	<0.1	-	-
Aldrin	mg/kg	0.1	-	<0.1	-	-
Isodrin	mg/kg	0.1	-	<0.1	-	-
Heptachlor epoxide	mg/kg	0.1	-	<0.1	-	-
Gamma Chlordane	mg/kg	0.1	-	<0.1	-	-
Alpha Chlordane	mg/kg	0.1	-	<0.1	-	-
Alpha Endosulfan	mg/kg	0.2	-	<0.2	-	-
o,p'-DDE*	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	-	-
o,p'-DDD*	mg/kg	0.1	-	<0.1	-	-
p,p'-DDD	mg/kg	0.1	-	<0.1	-	-
Endrin aldehyde	mg/kg	0.1	-	<0.1	-	-
Endosulfan sulphate	mg/kg	0.1	-	<0.1	-	-
o,p'-DDT*	mg/kg	0.1	-	<0.1	-	-
p,p'-DDT	mg/kg	0.1	-	<0.1	-	-
Endrin ketone	mg/kg	0.1	-	<0.1	-	-
Methoxychlor	mg/kg	0.1	-	<0.1	-	-
Mirex	mg/kg	0.1	-	<0.1	-	-
trans-Nonachlor	mg/kg	0.1	-	<0.1	-	-
Total CLP OC Pesticides	mg/kg	1	-	<1	-	-
Total OC VIC EPA	mg/kg	1	-	<1	-	-
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	-	**83**	-	-
OP Pesticides in Soil Method: AN420 Tested: 5/7/2023						
Azinphos-methyl (Guthion)	mg/kg	0.2	-	<0.2	-	-
Bromophos Ethyl	mg/kg	0.2	-	<0.2	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	-	<0.2	-	-
Diazinon (Dimpylate)	mg/kg	0.5	-	<0.5	-	-
Dichlorvos	mg/kg	0.5	-	<0.5	-	-
Dimethoate	mg/kg	0.5	-	<0.5	-	-
Ethion	mg/kg	0.2	-	<0.2	-	-
Fenitrothion	mg/kg	0.2	-	<0.2	-	-
Malathion	mg/kg	0.2	-	<0.2	-	-
Methidathion	mg/kg	0.5	-	<0.5	-	-
Parathion-ethyl (Parathion)	mg/kg	0.2	-	<0.2	-	-
Total OP Pesticides*	mg/kg	1.7	-	<1.7	-	-
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	-	**98**	-	-
d14-p-terphenyl (Surrogate)	%	-	-	**98**	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE249904.013 Soil 27 Jun 2023 Rinsate	SE249904.014 Soil 27 Jun 2023 Sample 6 0.1-0.2	SE249904.015 Soil 27 Jun 2023 Sample 6 0.2-0.3	SE249904.016 Soil 27 Jun 2023 Sample 7 0.1-0.2
Triazines in Soil Method: AN420 Tested: 5/7/2023						
Simazine	mg/kg	0.5	-	<0.5	-	<0.5
Atrazine	mg/kg	0.5	-	<0.5	-	<0.5
Propazine	mg/kg	0.5	-	<0.5	-	<0.5
Terbuthylazine	mg/kg	0.5	-	<0.5	-	<0.5
Metribuzin	mg/kg	0.5	-	<0.5	-	<0.5
Prometryn	mg/kg	0.5	-	<0.5	-	<0.5
Terbutryn	mg/kg	0.5	-	<0.5	-	<0.5
Cyanazine	mg/kg	0.5	-	<0.5	-	<0.5
Hexazinone	mg/kg	1	-	<1	-	<1
Surrogates						
d14-p-terphenyl (Surrogate)	%	-	-	**94**	-	**92**
Synthetic Pyrethroids in Soil Method: AN420 Tested: 5/7/2023						
Surrogates						
d14-p-terphenyl (Surrogate)	%	-	-	**94**	-	**92**
Synthetic Pyrethroids						
Bifenthrin	mg/kg	0.5	-	<0.5	-	<0.5
cis-Permethrin	mg/kg	0.5	-	<0.5	-	<0.5
trans-Permethrin	mg/kg	0.5	-	<0.5	-	<0.5
Cyfluthrin	mg/kg	1	-	<1	-	<1
Cypermethrin	mg/kg	1	-	<1	-	<1
Esfenvalerate	mg/kg	0.5	-	<0.5	-	<0.5
Deltamethrin	mg/kg	0.5	-	<0.5	-	<0.5
Carbamates in Soil Method: AN420 Tested: 5/7/2023						
Carbamates						
Carbofuran	mg/kg	0.5	-	<0.5	-	<0.5
Carbaryl	mg/kg	0.5	-	<0.5	-	<0.5
Surrogates						
d14-p-terphenyl (Surrogate)	%	-	-	**94**	-	**92**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE249904.013 Soil 27 Jun 2023 Rinsate	SE249904.014 Soil 27 Jun 2023 Sample 6 0.1-0.2	SE249904.015 Soil 27 Jun 2023 Sample 6 0.2-0.3	SE249904.016 Soil 27 Jun 2023 Sample 7 0.1-0.2
Pesticides / Herbicides in Soils by LC-MS/MS MA-1569.SL.01 Method: MA1569 Tested: 6/7/2023						
Bromoxynil*	mg/kg	0.5	-	<0.5	-	-
4-Chlorophenocy acetic acid (4-CPA)*	mg/kg	0.5	-	<0.5	-	-
Clopyralid*	mg/kg	0.5	-	<0.5	-	-
2,4-D [(2,4-Dichlorophenoxy) acetic acid]*	mg/kg	0.01	-	<0.01	-	-
2,4-DB*	mg/kg	0.5	-	<0.5	-	-
2,6-D*	mg/kg	0.5	-	<0.5	-	-
Dicamba*	mg/kg	0.01	-	<0.01	-	-
Dichloroprop / Dichlorprop-P*	mg/kg	0.01	-	<0.01	-	-
Dinoseb*	mg/kg	0.5	-	<0.5	-	-
Fluroxypyr*	mg/kg	0.5	-	<0.5	-	-
Ioxynil*	mg/kg	0.5	-	<0.5	-	-
MCPA*	mg/kg	0.01	-	<0.01	-	-
MCPB*	mg/kg	0.01	-	<0.01	-	-
mecoprop*	mg/kg	0.01	-	<0.01	-	-
Picloram*	mg/kg	0.01	-	<0.01	-	-
2,4,5-T*	mg/kg	0.01	-	<0.01	-	-
2,4,5-TP*	mg/kg	0.5	-	<0.5	-	-
2,4,6-Trichlorophenoxy acetic acid*	mg/kg	0.5	-	<0.5	-	-
Triclopyr*	mg/kg	0.01	-	<0.01	-	-
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 4/7/2023						
Arsenic, As	mg/kg	1	-	**2**	**2**	**2**
Cadmium, Cd	mg/kg	0.3	-	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	-	**9.3**	**7.6**	**8.8**
Copper, Cu	mg/kg	0.5	-	**1.2**	**2.9**	**3.6**
Nickel, Ni	mg/kg	0.5	-	**1.2**	**0.7**	**1.3**
Lead, Pb	mg/kg	1	-	**6**	**11**	**12**
Zinc, Zn	mg/kg	2	-	**4**	**11**	**13**
Mercury in Soil Method: AN312 Tested: 4/7/2023						
Mercury	mg/kg	0.05	-	<0.05	<0.05	<0.05
Moisture Content Method: AN002 Tested: 4/7/2023						
% Moisture	%w/w	1	-	**12.7**	**15.2**	**15.7**
Trace Metals (Dissolved) in Water by ICPMS Method: AN318 Tested: 29/6/2023						
Arsenic	µg/L	1	<1	-	-	-
Cadmium	µg/L	0.1	<0.1	-	-	-
Chromium	µg/L	1	<1	-	-	-
Copper	µg/L	1	<1	-	-	-
Lead	µg/L	1	<1	-	-	-
Nickel	µg/L	1	<1	-	-	-
Zinc	µg/L	5	<5	-	-	-
Mercury (dissolved) in Water Method: AN311(Perth)/AN312 Tested: 3/7/2023						
Mercury	mg/L	0.0001	<0.0001	-	-	-

Parameter	Units	LOR	Sample Number: SE249904.017 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Sample 7 0.25-0.35	SE249904.018 Soil 27 Jun 2023 Sample 8 0.1-0.2	SE249904.019 Soil 27 Jun 2023 Sample 8 0.3-0.4	SE249904.020 Soil 27 Jun 2023 Sample 9 0.1-0.2
VOC's in Soil Method: AN433 Tested: 30/6/2023						
Fumigants						
2,2-dichloropropane	mg/kg	0.1	-	<0.1	-	-
1,2-dichloropropane	mg/kg	0.1	-	<0.1	-	-
cis-1,3-dichloropropene	mg/kg	0.1	-	<0.1	-	-
trans-1,3-dichloropropene	mg/kg	0.1	-	<0.1	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	<0.1	-	-
Halogenated Aliphatics						
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	<1	-	-
Chloromethane	mg/kg	1	-	<1	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	<0.1	-	-
Bromomethane	mg/kg	1	-	<1	-	-
Chloroethane	mg/kg	1	-	<1	-	-
Trichlorofluoromethane	mg/kg	1	-	<1	-	-
1,1-dichloroethene	mg/kg	0.1	-	<0.1	-	-
Iodomethane	mg/kg	5	-	<5	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	<0.5	-	-
Allyl chloride	mg/kg	0.1	-	<0.1	-	-
trans-1,2-dichloroethene	mg/kg	0.1	-	<0.1	-	-
1,1-dichloroethane	mg/kg	0.1	-	<0.1	-	-
cis-1,2-dichloroethene	mg/kg	0.1	-	<0.1	-	-
Bromochloromethane	mg/kg	0.1	-	<0.1	-	-
1,2-dichloroethane	mg/kg	0.1	-	<0.1	-	-
1,1,1-trichloroethane	mg/kg	0.1	-	<0.1	-	-
1,1-dichloropropene	mg/kg	0.1	-	<0.1	-	-
Carbon tetrachloride	mg/kg	0.1	-	<0.1	-	-
Dibromomethane	mg/kg	0.1	-	<0.1	-	-
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	-	<0.1	-	-
1,1,2-trichloroethane	mg/kg	0.1	-	<0.1	-	-
1,3-dichloropropane	mg/kg	0.1	-	<0.1	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	<0.1	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	<0.1	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	<0.1	-	-
1,2,3-trichloropropane	mg/kg	0.1	-	<0.1	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	<1	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	<0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	-	<0.1	-	-
Halogenated Aromatics						
Chlorobenzene	mg/kg	0.1	-	<0.1	-	-
Bromobenzene	mg/kg	0.1	-	<0.1	-	-
2-chlorotoluene	mg/kg	0.1	-	<0.1	-	-
4-chlorotoluene	mg/kg	0.1	-	<0.1	-	-
1,3-dichlorobenzene	mg/kg	0.1	-	<0.1	-	-
1,4-dichlorobenzene	mg/kg	0.1	-	<0.1	-	-
1,2-dichlorobenzene	mg/kg	0.1	-	<0.1	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	<0.1	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	<0.1	-	-
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	-	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	<0.1	-	-
o-xylene	mg/kg	0.1	-	<0.1	-	-
Isopropylbenzene (Cumene)	mg/kg	0.1	-	<0.1	-	-
n-propylbenzene	mg/kg	0.1	-	<0.1	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	<0.1	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE249904.017 Soil 27 Jun 2023 Sample 7 0.25-0.35	SE249904.018 Soil 27 Jun 2023 Sample 8 0.1-0.2	SE249904.019 Soil 27 Jun 2023 Sample 8 0.3-0.4	SE249904.020 Soil 27 Jun 2023 Sample 9 0.1-0.2
VOC's in Soil Method: AN433 Tested: 30/6/2023 (continued)							
tert-butylbenzene	mg/kg	0.1		-	<0.1	-	-
1,2,4-trimethylbenzene	mg/kg	0.1		-	<0.1	-	-
sec-butylbenzene	mg/kg	0.1		-	<0.1	-	-
p-isopropyltoluene	mg/kg	0.1		-	<0.1	-	-
n-butylbenzene	mg/kg	0.1		-	<0.1	-	-
Nitrogenous Compounds							
Acrylonitrile	mg/kg	0.1		-	<0.1	-	-
2-nitropropane	mg/kg	10		-	<10	-	-
Oxygenated Compounds							
Acetone (2-propanone)	mg/kg	10		-	<10	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1		-	<0.1	-	-
Vinyl acetate*	mg/kg	10		-	<10	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1		-	<1	-	-
2-hexanone (MBK)	mg/kg	5		-	<5	-	-
Polycyclic VOCs							
Naphthalene (VOC)*	mg/kg	0.1		-	<0.1	-	-
Sulphonated Compounds							
Carbon disulfide	mg/kg	0.5		-	<0.5	-	-
Surrogates							
d4-1,2-dichloroethane (Surrogate)	%	-		-	**92**	-	-
d8-toluene (Surrogate)	%	-		-	**101**	-	-
Bromofluorobenzene (Surrogate)	%	-		-	**75**	-	-
Totals							
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8		-	<1.8	-	-
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8		-	<1.8	-	-
Total BTEX*	mg/kg	0.6		-	<0.6	-	-
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3		-	<3.0	-	-
Total VOC*	mg/kg	24		-	<24	-	-
Total Xylenes*	mg/kg	0.3		-	<0.3	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE249904.017 Soil 27 Jun 2023 Sample 7 0.25-0.35	SE249904.018 Soil 27 Jun 2023 Sample 8 0.1-0.2	SE249904.019 Soil 27 Jun 2023 Sample 8 0.3-0.4	SE249904.020 Soil 27 Jun 2023 Sample 9 0.1-0.2
VOC's in Soil Method: AN433 Tested: 30/6/2023 (continued)							
Trihalomethanes							
Chloroform (THM)	mg/kg	0.1		-	<0.1	-	-
Bromodichloromethane (THM)	mg/kg	0.1		-	<0.1	-	-
Dibromochloromethane (THM)	mg/kg	0.1		-	<0.1	-	-
Bromoform (THM)	mg/kg	0.1		-	<0.1	-	-
OC Pesticides in Soil Method: AN420 Tested: 4/7/2023							
Alpha BHC	mg/kg	0.1		-	<0.1	-	-
Hexachlorobenzene (HCB)	mg/kg	0.1		-	<0.1	-	-
Beta BHC	mg/kg	0.1		-	<0.1	-	-
Lindane (gamma BHC)	mg/kg	0.1		-	<0.1	-	-
Delta BHC	mg/kg	0.1		-	<0.1	-	-
Heptachlor	mg/kg	0.1		-	<0.1	-	-
Aldrin	mg/kg	0.1		-	<0.1	-	-
Isodrin	mg/kg	0.1		-	<0.1	-	-
Heptachlor epoxide	mg/kg	0.1		-	<0.1	-	-
Gamma Chlordane	mg/kg	0.1		-	<0.1	-	-
Alpha Chlordane	mg/kg	0.1		-	<0.1	-	-
Alpha Endosulfan	mg/kg	0.2		-	<0.2	-	-
o,p'-DDE*	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	-	-
o,p'-DDD*	mg/kg	0.1		-	<0.1	-	-
p,p'-DDD	mg/kg	0.1		-	<0.1	-	-
Endrin aldehyde	mg/kg	0.1		-	<0.1	-	-
Endosulfan sulphate	mg/kg	0.1		-	<0.1	-	-
o,p'-DDT*	mg/kg	0.1		-	<0.1	-	-
p,p'-DDT	mg/kg	0.1		-	<0.1	-	-
Endrin ketone	mg/kg	0.1		-	<0.1	-	-
Methoxychlor	mg/kg	0.1		-	<0.1	-	-
Mirex	mg/kg	0.1		-	<0.1	-	-
trans-Nonachlor	mg/kg	0.1		-	<0.1	-	-
Total CLP OC Pesticides	mg/kg	1		-	<1	-	-
Total OC VIC EPA	mg/kg	1		-	<1	-	-
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		-	**86**	-	-
OP Pesticides in Soil Method: AN420 Tested: 5/7/2023							
Azinphos-methyl (Guthion)	mg/kg	0.2		-	<0.2	-	-
Bromophos Ethyl	mg/kg	0.2		-	<0.2	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2		-	<0.2	-	-
Diazinon (Dimpylate)	mg/kg	0.5		-	<0.5	-	-
Dichlorvos	mg/kg	0.5		-	<0.5	-	-
Dimethoate	mg/kg	0.5		-	<0.5	-	-
Ethion	mg/kg	0.2		-	<0.2	-	-
Fenitrothion	mg/kg	0.2		-	<0.2	-	-
Malathion	mg/kg	0.2		-	<0.2	-	-
Methidathion	mg/kg	0.5		-	<0.5	-	-
Parathion-ethyl (Parathion)	mg/kg	0.2		-	<0.2	-	-
Total OP Pesticides*	mg/kg	1.7		-	<1.7	-	-
Surrogates							
2-fluorobiphenyl (Surrogate)	%	-		-	**103**	-	-
d14-p-terphenyl (Surrogate)	%	-		-	**99**	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE249904.017 Soil 27 Jun 2023 Sample 7 0.25-0.35	SE249904.018 Soil 27 Jun 2023 Sample 8 0.1-0.2	SE249904.019 Soil 27 Jun 2023 Sample 8 0.3-0.4	SE249904.020 Soil 27 Jun 2023 Sample 9 0.1-0.2
Triazines in Soil Method: AN420 Tested: 5/7/2023							
Simazine	mg/kg	0.5		-	<0.5	-	<0.5
Atrazine	mg/kg	0.5		-	<0.5	-	<0.5
Propazine	mg/kg	0.5		-	<0.5	-	<0.5
Terbuthylazine	mg/kg	0.5		-	<0.5	-	<0.5
Metribuzin	mg/kg	0.5		-	<0.5	-	<0.5
Prometryn	mg/kg	0.5		-	<0.5	-	<0.5
Terbutryn	mg/kg	0.5		-	<0.5	-	<0.5
Cyanazine	mg/kg	0.5		-	<0.5	-	<0.5
Hexazinone	mg/kg	1		-	<1	-	<1
Surrogates							
d14-p-terphenyl (Surrogate)	%	-		-	**92**	-	**94**
Synthetic Pyrethroids in Soil Method: AN420 Tested: 5/7/2023							
Surrogates							
d14-p-terphenyl (Surrogate)	%	-		-	**94**	-	**92**
Synthetic Pyrethroids							
Bifenthrin	mg/kg	0.5		-	<0.5	-	<0.5
cis-Permethrin	mg/kg	0.5		-	<0.5	-	<0.5
trans-Permethrin	mg/kg	0.5		-	<0.5	-	<0.5
Cyfluthrin	mg/kg	1		-	<1	-	<1
Cypermethrin	mg/kg	1		-	<1	-	<1
Esfenvalerate	mg/kg	0.5		-	<0.5	-	<0.5
Deltamethrin	mg/kg	0.5		-	<0.5	-	<0.5
Carbamates in Soil Method: AN420 Tested: 5/7/2023							
Carbamates							
Carbofuran	mg/kg	0.5		-	<0.5	-	<0.5
Carbaryl	mg/kg	0.5		-	<0.5	-	<0.5
Surrogates							
d14-p-terphenyl (Surrogate)	%	-		-	**94**	-	**92**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE249904.017 Soil 27 Jun 2023 Sample 7 0.25-0.35	SE249904.018 Soil 27 Jun 2023 Sample 8 0.1-0.2	SE249904.019 Soil 27 Jun 2023 Sample 8 0.3-0.4	SE249904.020 Soil 27 Jun 2023 Sample 9 0.1-0.2
Pesticides / Herbicides in Soils by LC-MS/MS MA-1569.SL.01 Method: MA1569 Tested: 6/7/2023							
Bromoxynil*	mg/kg	0.5		-	<0.5	-	-
4-Chlorophenocy acetic acid (4-CPA)*	mg/kg	0.5		-	<0.5	-	-
Clopyralid*	mg/kg	0.5		-	<0.5	-	-
2,4-D [(2,4-Dichlorophenoxy) acetic acid]*	mg/kg	0.01		-	<0.01	-	-
2,4-DB*	mg/kg	0.5		-	<0.5	-	-
2,6-D*	mg/kg	0.5		-	<0.5	-	-
Dicamba*	mg/kg	0.01		-	<0.01	-	-
Dichloroprop / Dichlorprop-P*	mg/kg	0.01		-	<0.01	-	-
Dinoseb*	mg/kg	0.5		-	<0.5	-	-
Fluroxypyr*	mg/kg	0.5		-	<0.5	-	-
Ioxynil*	mg/kg	0.5		-	<0.5	-	-
MCPA*	mg/kg	0.01		-	<0.01	-	-
MCPB*	mg/kg	0.01		-	<0.01	-	-
mecoprop*	mg/kg	0.01		-	<0.01	-	-
Picloram*	mg/kg	0.01		-	<0.01	-	-
2,4,5-T*	mg/kg	0.01		-	<0.01	-	-
2,4,5-TP*	mg/kg	0.5		-	<0.5	-	-
2,4,6-Trichlorophenoxy acetic acid*	mg/kg	0.5		-	<0.5	-	-
Triclopyr*	mg/kg	0.01		-	<0.01	-	-
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 29/6/2023							
Arsenic, As	mg/kg	1		**2**	**1**	**1**	**5**
Cadmium, Cd	mg/kg	0.3		<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5		**14**	**1.8**	**2.3**	**12**
Copper, Cu	mg/kg	0.5		**1.8**	**6.9**	**5.2**	**5.6**
Nickel, Ni	mg/kg	0.5		**2.0**	**0.5**	<0.5	**1.4**
Lead, Pb	mg/kg	1		**10**	**12**	**8**	**17**
Zinc, Zn	mg/kg	2		**5**	**18**	**7**	**22**
Mercury in Soil Method: AN312 Tested: 29/6/2023							
Mercury	mg/kg	0.05		<0.05	<0.05	<0.05	<0.05
Moisture Content Method: AN002 Tested: 30/6/2023							
% Moisture	%w/w	1		**12.2**	**13.1**	**9.0**	**16.1**
Trace Metals (Dissolved) in Water by ICPMS Method: AN318 Tested: 29/6/2023							
Arsenic	µg/L	1		-	-	-	-
Cadmium	µg/L	0.1		-	-	-	-
Chromium	µg/L	1		-	-	-	-
Copper	µg/L	1		-	-	-	-
Lead	µg/L	1		-	-	-	-
Nickel	µg/L	1		-	-	-	-
Zinc	µg/L	5		-	-	-	-
Mercury (dissolved) in Water Method: AN311(Perth)/AN312 Tested: 4/7/2023							
Mercury	mg/L	0.0001		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE249904.021 Soil 27 Jun 2023 Sample 9 0.25-0.3	SE249904.022 Soil 27 Jun 2023 Sample 10 0.1-0.2	SE249904.023 Soil 27 Jun 2023 Sample 10 0.3-0.35	SE249904.024 Soil 27 Jun 2023 QC3
VOC's in Soil Method: AN433 Tested: 30/6/2023							
Fumigants							
2,2-dichloropropane	mg/kg	0.1		-	<0.1	-	-
1,2-dichloropropane	mg/kg	0.1		-	<0.1	-	-
cis-1,3-dichloropropene	mg/kg	0.1		-	<0.1	-	-
trans-1,3-dichloropropene	mg/kg	0.1		-	<0.1	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1		-	<0.1	-	-
Halogenated Aliphatics							
Dichlorodifluoromethane (CFC-12)	mg/kg	1		-	<1	-	-
Chloromethane	mg/kg	1		-	<1	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1		-	<0.1	-	-
Bromomethane	mg/kg	1		-	<1	-	-
Chloroethane	mg/kg	1		-	<1	-	-
Trichlorofluoromethane	mg/kg	1		-	<1	-	-
1,1-dichloroethene	mg/kg	0.1		-	<0.1	-	-
Iodomethane	mg/kg	5		-	<5	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5		-	<0.5	-	-
Allyl chloride	mg/kg	0.1		-	<0.1	-	-
trans-1,2-dichloroethene	mg/kg	0.1		-	<0.1	-	-
1,1-dichloroethane	mg/kg	0.1		-	<0.1	-	-
cis-1,2-dichloroethene	mg/kg	0.1		-	<0.1	-	-
Bromochloromethane	mg/kg	0.1		-	<0.1	-	-
1,2-dichloroethane	mg/kg	0.1		-	<0.1	-	-
1,1,1-trichloroethane	mg/kg	0.1		-	<0.1	-	-
1,1-dichloropropene	mg/kg	0.1		-	<0.1	-	-
Carbon tetrachloride	mg/kg	0.1		-	<0.1	-	-
Dibromomethane	mg/kg	0.1		-	<0.1	-	-
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1		-	<0.1	-	-
1,1,2-trichloroethane	mg/kg	0.1		-	<0.1	-	-
1,3-dichloropropane	mg/kg	0.1		-	<0.1	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1		-	<0.1	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1		-	<0.1	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1		-	<0.1	-	-
1,2,3-trichloropropane	mg/kg	0.1		-	<0.1	-	-
trans-1,4-dichloro-2-butene	mg/kg	1		-	<1	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1		-	<0.1	-	-
Hexachlorobutadiene	mg/kg	0.1		-	<0.1	-	-
Halogenated Aromatics							
Chlorobenzene	mg/kg	0.1		-	<0.1	-	-
Bromobenzene	mg/kg	0.1		-	<0.1	-	-
2-chlorotoluene	mg/kg	0.1		-	<0.1	-	-
4-chlorotoluene	mg/kg	0.1		-	<0.1	-	-
1,3-dichlorobenzene	mg/kg	0.1		-	<0.1	-	-
1,4-dichlorobenzene	mg/kg	0.1		-	<0.1	-	-
1,2-dichlorobenzene	mg/kg	0.1		-	<0.1	-	-
1,2,4-trichlorobenzene	mg/kg	0.1		-	<0.1	-	-
1,2,3-trichlorobenzene	mg/kg	0.1		-	<0.1	-	-
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	-	-
Styrene (Vinyl benzene)	mg/kg	0.1		-	<0.1	-	-
o-xylene	mg/kg	0.1		-	<0.1	-	-
Isopropylbenzene (Cumene)	mg/kg	0.1		-	<0.1	-	-
n-propylbenzene	mg/kg	0.1		-	<0.1	-	-
1,3,5-trimethylbenzene	mg/kg	0.1		-	<0.1	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE249904.021 Soil 27 Jun 2023 Sample 9 0.25-0.3	SE249904.022 Soil 27 Jun 2023 Sample 10 0.1-0.2	SE249904.023 Soil 27 Jun 2023 Sample 10 0.3-0.35	SE249904.024 Soil 27 Jun 2023 QC3
VOC's in Soil Method: AN433 Tested: 30/6/2023 (continued)							
tert-butylbenzene	mg/kg	0.1		-	<0.1	-	-
1,2,4-trimethylbenzene	mg/kg	0.1		-	<0.1	-	-
sec-butylbenzene	mg/kg	0.1		-	<0.1	-	-
p-isopropyltoluene	mg/kg	0.1		-	<0.1	-	-
n-butylbenzene	mg/kg	0.1		-	<0.1	-	-
Nitrogenous Compounds							
Acrylonitrile	mg/kg	0.1		-	<0.1	-	-
2-nitropropane	mg/kg	10		-	<10	-	-
Oxygenated Compounds							
Acetone (2-propanone)	mg/kg	10		-	<10	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1		-	<0.1	-	-
Vinyl acetate*	mg/kg	10		-	<10	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1		-	<1	-	-
2-hexanone (MBK)	mg/kg	5		-	<5	-	-
Polycyclic VOCs							
Naphthalene (VOC)*	mg/kg	0.1		-	<0.1	-	-
Sulphonated Compounds							
Carbon disulfide	mg/kg	0.5		-	<0.5	-	-
Surrogates							
d4-1,2-dichloroethane (Surrogate)	%	-		-	**85**	-	-
d8-toluene (Surrogate)	%	-		-	**78**	-	-
Bromofluorobenzene (Surrogate)	%	-		-	**87**	-	-
Totals							
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8		-	<1.8	-	-
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8		-	<1.8	-	-
Total BTEX*	mg/kg	0.6		-	<0.6	-	-
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3		-	<3.0	-	-
Total VOC*	mg/kg	24		-	<24	-	-
Total Xylenes*	mg/kg	0.3		-	<0.3	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE249904.021 Soil 27 Jun 2023 Sample 9 0.25-0.3	SE249904.022 Soil 27 Jun 2023 Sample 10 0.1-0.2	SE249904.023 Soil 27 Jun 2023 Sample 10 0.3-0.35	SE249904.024 Soil 27 Jun 2023 QC3
VOC's in Soil Method: AN433 Tested: 30/6/2023 (continued)							
Trihalomethanes							
Chloroform (THM)	mg/kg	0.1		-	<0.1	-	-
Bromodichloromethane (THM)	mg/kg	0.1		-	<0.1	-	-
Dibromochloromethane (THM)	mg/kg	0.1		-	<0.1	-	-
Bromoform (THM)	mg/kg	0.1		-	<0.1	-	-
OC Pesticides in Soil Method: AN420 Tested: 4/7/2023							
Alpha BHC	mg/kg	0.1		-	<0.1	-	-
Hexachlorobenzene (HCB)	mg/kg	0.1		-	<0.1	-	-
Beta BHC	mg/kg	0.1		-	<0.1	-	-
Lindane (gamma BHC)	mg/kg	0.1		-	<0.1	-	-
Delta BHC	mg/kg	0.1		-	<0.1	-	-
Heptachlor	mg/kg	0.1		-	<0.1	-	-
Aldrin	mg/kg	0.1		-	<0.1	-	-
Isodrin	mg/kg	0.1		-	<0.1	-	-
Heptachlor epoxide	mg/kg	0.1		-	<0.1	-	-
Gamma Chlordane	mg/kg	0.1		-	<0.1	-	-
Alpha Chlordane	mg/kg	0.1		-	<0.1	-	-
Alpha Endosulfan	mg/kg	0.2		-	<0.2	-	-
o,p'-DDE*	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	-	-
o,p'-DDD*	mg/kg	0.1		-	<0.1	-	-
p,p'-DDD	mg/kg	0.1		-	<0.1	-	-
Endrin aldehyde	mg/kg	0.1		-	<0.1	-	-
Endosulfan sulphate	mg/kg	0.1		-	<0.1	-	-
o,p'-DDT*	mg/kg	0.1		-	<0.1	-	-
p,p'-DDT	mg/kg	0.1		-	<0.1	-	-
Endrin ketone	mg/kg	0.1		-	<0.1	-	-
Methoxychlor	mg/kg	0.1		-	<0.1	-	-
Mirex	mg/kg	0.1		-	<0.1	-	-
trans-Nonachlor	mg/kg	0.1		-	<0.1	-	-
Total CLP OC Pesticides	mg/kg	1		-	<1	-	-
Total OC VIC EPA	mg/kg	1		-	<1	-	-
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		-	**83**	-	-
OP Pesticides in Soil Method: AN420 Tested: 5/7/2023							
Azinphos-methyl (Guthion)	mg/kg	0.2		-	<0.2	-	-
Bromophos Ethyl	mg/kg	0.2		-	<0.2	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2		-	<0.2	-	-
Diazinon (Dimpylate)	mg/kg	0.5		-	<0.5	-	-
Dichlorvos	mg/kg	0.5		-	<0.5	-	-
Dimethoate	mg/kg	0.5		-	<0.5	-	-
Ethion	mg/kg	0.2		-	<0.2	-	-
Fenitrothion	mg/kg	0.2		-	<0.2	-	-
Malathion	mg/kg	0.2		-	<0.2	-	-
Methidathion	mg/kg	0.5		-	<0.5	-	-
Parathion-ethyl (Parathion)	mg/kg	0.2		-	<0.2	-	-
Total OP Pesticides*	mg/kg	1.7		-	<1.7	-	-
Surrogates							
2-fluorobiphenyl (Surrogate)	%	-		-	**102**	-	-
d14-p-terphenyl (Surrogate)	%	-		-	**100**	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE249904.021 Soil 27 Jun 2023 Sample 9 0.25-0.3	SE249904.022 Soil 27 Jun 2023 Sample 10 0.1-0.2	SE249904.023 Soil 27 Jun 2023 Sample 10 0.3-0.35	SE249904.024 Soil 27 Jun 2023 QC3
Triazines in Soil Method: AN420 Tested: 5/7/2023							
Simazine	mg/kg	0.5		-	<0.5	-	-
Atrazine	mg/kg	0.5		-	<0.5	-	-
Propazine	mg/kg	0.5		-	<0.5	-	-
Terbuthylazine	mg/kg	0.5		-	<0.5	-	-
Metribuzin	mg/kg	0.5		-	<0.5	-	-
Prometryn	mg/kg	0.5		-	<0.5	-	-
Terbutryn	mg/kg	0.5		-	<0.5	-	-
Cyanazine	mg/kg	0.5		-	<0.5	-	-
Hexazinone	mg/kg	1		-	<1	-	-
Surrogates							
d14-p-terphenyl (Surrogate)	%	-		-	**90**	-	-
Synthetic Pyrethroids in Soil Method: AN420 Tested: 5/7/2023							
Surrogates							
d14-p-terphenyl (Surrogate)	%	-		-	**94**	-	-
Synthetic Pyrethroids							
Bifenthrin	mg/kg	0.5		-	<0.5	-	-
cis-Permethrin	mg/kg	0.5		-	<0.5	-	-
trans-Permethrin	mg/kg	0.5		-	<0.5	-	-
Cyfluthrin	mg/kg	1		-	<1	-	-
Cypermethrin	mg/kg	1		-	<1	-	-
Esfenvalerate	mg/kg	0.5		-	<0.5	-	-
Deltamethrin	mg/kg	0.5		-	<0.5	-	-
Carbamates in Soil Method: AN420 Tested: 5/7/2023							
Carbamates							
Carbofuran	mg/kg	0.5		-	<0.5	-	-
Carbaryl	mg/kg	0.5		-	<0.5	-	-
Surrogates							
d14-p-terphenyl (Surrogate)	%	-		-	**94**	-	-

Parameter	Units	LOR	Sample Number: SE249904.021 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: Sample 9 0.25-0.3	SE249904.022 Soil 27 Jun 2023 Sample 10 0.1-0.2	SE249904.023 Soil 27 Jun 2023 Sample 10 0.3-0.35	SE249904.024 Soil 27 Jun 2023 QC3
Pesticides / Herbicides in Soils by LC-MS/MS MA-1569.SL.01 Method: MA1569 Tested: 6/7/2023						
Bromoxynil*	mg/kg	0.5	-	<0.5	-	-
4-Chlorophenocy acetic acid (4-CPA)*	mg/kg	0.5	-	<0.5	-	-
Clopyralid*	mg/kg	0.5	-	<0.5	-	-
2,4-D [(2,4-Dichlorophenoxy) acetic acid]*	mg/kg	0.01	-	<0.01	-	-
2,4-DB*	mg/kg	0.5	-	<0.5	-	-
2,6-D*	mg/kg	0.5	-	<0.5	-	-
Dicamba*	mg/kg	0.01	-	<0.01	-	-
Dichloroprop / Dichlorprop-P*	mg/kg	0.01	-	<0.01	-	-
Dinoseb*	mg/kg	0.5	-	<0.5	-	-
Fluroxypyr*	mg/kg	0.5	-	<0.5	-	-
Ioxynil*	mg/kg	0.5	-	<0.5	-	-
MCPA*	mg/kg	0.01	-	<0.01	-	-
MCPB*	mg/kg	0.01	-	<0.01	-	-
mecoprop*	mg/kg	0.01	-	<0.01	-	-
Picloram*	mg/kg	0.01	-	<0.01	-	-
2,4,5-T*	mg/kg	0.01	-	<0.01	-	-
2,4,5-TP*	mg/kg	0.5	-	<0.5	-	-
2,4,6-Trichlorophenoxy acetic acid*	mg/kg	0.5	-	<0.5	-	-
Triclopyr*	mg/kg	0.01	-	<0.01	-	-
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 29/6/2023						
Arsenic, As	mg/kg	1	**10**	**4**	**4**	**3**
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	**18**	**8.8**	**9.0**	**11**
Copper, Cu	mg/kg	0.5	**3.9**	**4.0**	**2.0**	<0.5
Nickel, Ni	mg/kg	0.5	**3.5**	**1.2**	**1.0**	**1.5**
Lead, Pb	mg/kg	1	**14**	**11**	**9**	**12**
Zinc, Zn	mg/kg	2	**16**	**20**	**4**	**6**
Mercury in Soil Method: AN312 Tested: 29/6/2023						
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content Method: AN002 Tested: 30/6/2023						
% Moisture	%w/w	1	**14.3**	**18.1**	**13.7**	**9.0**
Trace Metals (Dissolved) in Water by ICPMS Method: AN318 Tested: 29/6/2023						
Arsenic	µg/L	1	-	-	-	-
Cadmium	µg/L	0.1	-	-	-	-
Chromium	µg/L	1	-	-	-	-
Copper	µg/L	1	-	-	-	-
Lead	µg/L	1	-	-	-	-
Nickel	µg/L	1	-	-	-	-
Zinc	µg/L	5	-	-	-	-
Mercury (dissolved) in Water Method: AN311(Perth)/AN312 Tested: 4/7/2023						
Mercury	mg/L	0.0001	-	-	-	-

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

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

Carbamates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Carbofuran	LB284020	mg/kg	0.5	<0.5	0%	105%
Carbaryl	LB284020	mg/kg	0.5	<0.5	0%	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
d14-p-terphenyl (Surrogate)	LB284020	%	-	106%	2%	90%

Mercury (dissolved) in Water Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB284151	mg/L	0.0001	<0.0001	0%	101%	89%

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB284032	mg/kg	0.05	<0.05	0%	115%	106%
	LB284033	mg/kg	0.05	<0.05	0%	95%	104%

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

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB284094	%w/w	1	12 - 35%
	LB284095	%w/w	1	1 - 2%

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Alpha BHC	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
Hexachlorobenzene (HCB)	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
Beta BHC	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
Lindane (gamma BHC)	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
Delta BHC	LB284019	mg/kg	0.1	<0.1	0%	90%	100%
Heptachlor	LB284019	mg/kg	0.1	<0.1	0%	86%	105%
Aldrin	LB284019	mg/kg	0.1	<0.1	0%	87%	100%
Isodrin	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
Heptachlor epoxide	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
Gamma Chlordane	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
Alpha Chlordane	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
Alpha Endosulfan	LB284019	mg/kg	0.2	<0.2	0%	NA	NA
o,p'-DDE*	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
p,p'-DDE	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
Dieldrin	LB284019	mg/kg	0.2	<0.2	0%	69%	74%
Endrin	LB284019	mg/kg	0.2	<0.2	0%	66%	104%
Beta Endosulfan	LB284019	mg/kg	0.2	<0.2	0%	NA	NA
o,p'-DDD*	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
p,p'-DDD	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
Endrin aldehyde	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
Endosulfan sulphate	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
o,p'-DDT*	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
p,p'-DDT	LB284019	mg/kg	0.1	<0.1	0%	105%	109%
Endrin ketone	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
Methoxychlor	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
Mirex	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
trans-Nonachlor	LB284019	mg/kg	0.1	<0.1	0%	NA	NA
Total CLP OC Pesticides	LB284019	mg/kg	1	<1	0%	NA	NA
Total OC VIC EPA	LB284019	mg/kg	1	<1	0%	NA	NA

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

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

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB284019	%	-	83%	2 - 5%	86%	74%

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Azinphos-methyl (Guthion)	LB284019	mg/kg	0.2	<0.2	0%	NA	NA
Bromophos Ethyl	LB284019	mg/kg	0.2	<0.2	0%	NA	NA
Chlorpyrifos (Chlorpyrifos Ethyl)	LB284019	mg/kg	0.2	<0.2	0%	81%	109%
Diazinon (Dimpylate)	LB284019	mg/kg	0.5	<0.5	0%	85%	112%
Dichlorvos	LB284019	mg/kg	0.5	<0.5	0%	67%	64%
Dimethoate	LB284019	mg/kg	0.5	<0.5	0%	NA	NA
Ethion	LB284019	mg/kg	0.2	<0.2	0%	69%	93%
Fenitrothion	LB284019	mg/kg	0.2	<0.2	0%	NA	NA
Malathion	LB284019	mg/kg	0.2	<0.2	0%	NA	NA
Methidathion	LB284019	mg/kg	0.5	<0.5	0%	NA	NA
Parathion-ethyl (Parathion)	LB284019	mg/kg	0.2	<0.2	0%	NA	NA
Total OP Pesticides*	LB284019	mg/kg	1.7	<1.7	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
2-fluorobiphenyl (Surrogate)	LB284019	%	-	95%	1 - 13%	105%	101%
d14-p-terphenyl (Surrogate)	LB284019	%	-	98%	2 - 9%	100%	98%

Synthetic Pyrethroids in Soil **Method: ME-(AU)-[ENV]AN420**

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
d14-p-terphenyl (Surrogate)	LB284020	%	-	106%	2%	90%

Synthetic Pyrethroids

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Bifenthrin	LB284020	mg/kg	0.5	<0.5	0%	90%
cis-Permethrin	LB284020	mg/kg	0.5	<0.5	0%	NA
trans-Permethrin	LB284020	mg/kg	0.5	<0.5	0%	NA
Cyfluthrin	LB284020	mg/kg	1	<1	0%	NA
Cypermethrin	LB284020	mg/kg	1	<1	0%	NA
Esfenvalerate	LB284020	mg/kg	0.5	<0.5	0%	NA
Deltamethrin	LB284020	mg/kg	0.5	<0.5	0%	NA

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

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB284026	mg/kg	1	<1	19 - 36%	109%	91%
	LB284027	mg/kg	1	<1	3%	106%	98%
Cadmium, Cd	LB284026	mg/kg	0.3	<0.3	0%	86%	81%
	LB284027	mg/kg	0.3	<0.3	0%	83%	90%
Chromium, Cr	LB284026	mg/kg	0.5	<0.5	29 - 30%	108%	86%
	LB284027	mg/kg	0.5	<0.5	0 - 30%	105%	103%
Copper, Cu	LB284026	mg/kg	0.5	<0.5	4 - 12%	109%	89%
	LB284027	mg/kg	0.5	<0.5	0 - 9%	107%	104%
Nickel, Ni	LB284026	mg/kg	0.5	<0.5	23 - 40%	103%	85%
	LB284027	mg/kg	0.5	<0.5	3 - 13%	100%	102%
Lead, Pb	LB284026	mg/kg	1	<1	11 - 16%	103%	87%
	LB284027	mg/kg	1	<1	2 - 17%	101%	96%
Zinc, Zn	LB284026	mg/kg	2	<2	4 - 11%	102%	90%
	LB284027	mg/kg	2	<2	0 - 4%	101%	101%

Trace Metals (Dissolved) in Water by ICPMS **Method: ME-(AU)-[ENV]AN318**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic	LB283919	µg/L	1	<1	0%	106%	
Cadmium	LB283919	µg/L	0.1	<0.1	0 - 24%	105%	
Chromium	LB283919	µg/L	1	<1	0%	97%	
Copper	LB283919	µg/L	1	<1	0 - 58%	97%	
Lead	LB283919	µg/L	1	<1	0%	98%	104%
Nickel	LB283919	µg/L	1	<1	0%	104%	
Zinc	LB283919	µg/L	5	<5	0 - 2%	97%	

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Simazine	LB284020	mg/kg	0.5	<0.5	0%	NA
Atrazine	LB284020	mg/kg	0.5	<0.5	0%	82%
Propazine	LB284020	mg/kg	0.5	<0.5	0%	77%
Terbuthylazine	LB284020	mg/kg	0.5	<0.5	0%	94%
Metribuzin	LB284020	mg/kg	0.5	<0.5	0%	NA
Prometryn	LB284020	mg/kg	0.5	<0.5	0%	79%
Terbutryn	LB284020	mg/kg	0.5	<0.5	0%	80%
Cyanazine	LB284020	mg/kg	0.5	<0.5	0%	NA
Hexazinone	LB284020	mg/kg	1	<1	0%	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
d14-p-terphenyl (Surrogate)	LB284020	%	-	102%	2%	86%

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

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

Fumigants

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
2,2-dichloropropane	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,2-dichloropropane	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
cis-1,3-dichloropropene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
trans-1,3-dichloropropene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,2-dibromoethane (EDB)	LB283872	mg/kg	0.1	<0.1	0%	NA	NA

Halogenated Aliphatics

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dichlorodifluoromethane (CFC-12)	LB283872	mg/kg	1	<1	0%	NA	NA
Chloromethane	LB283872	mg/kg	1	<1	0%	NA	NA
Vinyl chloride (Chloroethene)	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
Bromomethane	LB283872	mg/kg	1	<1	0%	NA	NA
Chloroethane	LB283872	mg/kg	1	<1	0%	NA	NA
Trichlorofluoromethane	LB283872	mg/kg	1	<1	0%	NA	NA
1,1-dichloroethene	LB283872	mg/kg	0.1	<0.1	0%	81%	79%
Iodomethane	LB283872	mg/kg	5	<5	0%	NA	NA
Dichloromethane (Methylene chloride)	LB283872	mg/kg	0.5	<0.5	0%	NA	NA
Allyl chloride	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
trans-1,2-dichloroethene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,1-dichloroethane	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
cis-1,2-dichloroethene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
Bromochloromethane	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,2-dichloroethane	LB283872	mg/kg	0.1	<0.1	0%	95%	92%
1,1,1-trichloroethane	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,1-dichloropropene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
Carbon tetrachloride	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
Dibromomethane	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
Trichloroethene (Trichloroethylene,TCE)	LB283872	mg/kg	0.1	<0.1	0%	102%	105%
1,1,2-trichloroethane	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,3-dichloropropane	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
Tetrachloroethene (Perchloroethylene,PCE)	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,1,1,2-tetrachloroethane	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,1,2,2-tetrachloroethane	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,2,3-trichloropropane	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
trans-1,4-dichloro-2-butene	LB283872	mg/kg	1	<1	0%	NA	NA
1,2-dibromo-3-chloropropane	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
Hexachlorobutadiene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA

Halogenated Aromatics

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Chlorobenzene	LB283872	mg/kg	0.1	<0.1	0%	102%	95%
Bromobenzene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
2-chlorotoluene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
4-chlorotoluene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,3-dichlorobenzene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,4-dichlorobenzene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,2-dichlorobenzene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,2,4-trichlorobenzene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,2,3-trichlorobenzene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA

Monocyclic Aromatic Hydrocarbons

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

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene	LB283872	mg/kg	0.1	<0.1	0%	109%	101%
Toluene	LB283872	mg/kg	0.1	<0.1	0%	113%	104%
Ethylbenzene	LB283872	mg/kg	0.1	<0.1	0%	107%	95%
m/p-xylene	LB283872	mg/kg	0.2	<0.2	0%	105%	92%
Styrene (Vinyl benzene)	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
o-xylene	LB283872	mg/kg	0.1	<0.1	0%	106%	93%
Isopropylbenzene (Cumene)	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
n-propylbenzene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,3,5-trimethylbenzene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
tert-butylbenzene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
1,2,4-trimethylbenzene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
sec-butylbenzene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
p-isopropyltoluene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
n-butylbenzene	LB283872	mg/kg	0.1	<0.1	0%	NA	NA

Nitrogenous Compounds

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Acrylonitrile	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
2-nitropropane	LB283872	mg/kg	10	<10	0%	NA	NA

Oxygenated Compounds

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Acetone (2-propanone)	LB283872	mg/kg	10	<10	0%	NA	NA
MtBE (Methyl-tert-butyl ether)	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
Vinyl acetate*	LB283872	mg/kg	10	<10	0%	NA	NA
MIBK (4-methyl-2-pentanone)	LB283872	mg/kg	1	<1	0%	NA	NA
2-hexanone (MBK)	LB283872	mg/kg	5	<5	0%	NA	NA

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene (VOC)*	LB283872	mg/kg	0.1	<0.1	0%	NA	NA

Sulphonated Compounds

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Carbon disulfide	LB283872	mg/kg	0.5	<0.5	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB283872	%	-	97%	4 - 10%	120%	113%
d8-toluene (Surrogate)	LB283872	%	-	110%	16 - 28%	115%	99%
Bromofluorobenzene (Surrogate)	LB283872	%	-	92%	1 - 19%	117%	101%

Totals

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Total Other Chlorinated Hydrocarbons VIC EPA*	LB283872	mg/kg	1.8	<1.8	0%	NA	NA
Total Chlorinated Hydrocarbons VIC EPA*	LB283872	mg/kg	1.8	<1.8	0%	NA	NA
Total BTEX*	LB283872	mg/kg	0.6	<0.6	0%	NA	NA
Total Volatile Chlorinated Hydrocarbons*	LB283872	mg/kg	3	<3.0	0%	NA	NA
Total VOC*	LB283872	mg/kg	24	<24	0%	NA	NA
Total Xylenes*	LB283872	mg/kg	0.3	<0.3	0%	NA	NA

Trihalomethanes

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

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Chloroform (THM)	LB283872	mg/kg	0.1	<0.1	0%	100%	97%
Bromodichloromethane (THM)	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
Dibromochloromethane (THM)	LB283872	mg/kg	0.1	<0.1	0%	NA	NA
Bromoform (THM)	LB283872	mg/kg	0.1	<0.1	0%	NA	NA

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by AAS or ICP as per USEPA Method 200.8.
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.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN318	Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
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).
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.
MA-1569	This method is intended for the analysis of a diverse range of pesticides and herbicides by Liquid Chromatography using a Tandem Mass Spectrometry detector (LC-MS/MS). Due to the diverse nature of the analytes covered in this method each analyte requires its own analytical acquisition method thus the sample is run multiple times according to the analyte list requested. Soil and solid samples are extracted with ACN and extracts are filtered then directly injected onto LC -MS/MS using selective ion monitoring.

FOOTNOTES

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

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

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

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

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

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

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

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

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

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Huong Crawford	Manager	Adam Atkinson
Client	SGS I&E SYDNEY	Laboratory	SGS Melbourne EH&S
Address	Unit 16, 33 Maddox Street Alexandria NSW 2015	Address	10/585 Blackburn Road Notting Hill Victoria 3168
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Facsimile	02 8594 0499	Facsimile	+61395743399
Email	au.environmental.sydney@sgs.com	Email	Au.SampleReceipt.Melbourne@sgs.com
Project	**MES2167**	SGS Reference	**ME335307 R0**
Order Number	**SE249904**	Date Received	30 Jun 2023
Samples	24	Date Reported	06 Jul 2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562 (14420/22793/24472).

SIGNATORIES

Wei Lu

Wei LU2
Laboratory Technician

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME335307.001 Soil 27 Jun 2023 SE249904.001	ME335307.002 Soil 27 Jun 2023 SE249904.002	ME335307.003 Soil 27 Jun 2023 SE249904.003	ME335307.004 Soil 27 Jun 2023 SE249904.004
Pesticides / Herbicides in Soils by LC-MS/MS MA-1569.SL.01 Method: MA1569 Tested: 5/7/2023							
Bromoxynil*	mg/kg	0.5		<0.5	-	-	-
4-Chlorophenocy acetic acid (4-CPA)*	mg/kg	0.5		<0.5	-	-	-
Clopyralid*	mg/kg	0.5		<0.5	-	-	-
2,4-D [(2,4-Dichlorophenoxy) acetic acid]*	mg/kg	0.01		<0.01	-	-	-
2,4-DB*	mg/kg	0.5		<0.5	-	-	-
2,6-D*	mg/kg	0.5		<0.5	-	-	-
Dicamba*	mg/kg	0.01		<0.01	-	-	-
Dichloroprop / Dichlorprop-P*	mg/kg	0.01		<0.01	-	-	-
Dinoseb*	mg/kg	0.5		<0.5	-	-	-
Fluroxypyr*	mg/kg	0.5		<0.5	-	-	-
Ioxynil*	mg/kg	0.5		<0.5	-	-	-
MCPA*	mg/kg	0.01		<0.01	-	-	-
MCPB*	mg/kg	0.01		<0.01	-	-	-
mecoprop*	mg/kg	0.01		<0.01	-	-	-
Picloram*	mg/kg	0.01		<0.01	-	-	-
2,4,5-T*	mg/kg	0.01		<0.01	-	-	-
2,4,5-TP*	mg/kg	0.5		<0.5	-	-	-
2,4,6-Trichlorophenoxy acetic acid*	mg/kg	0.5		<0.5	-	-	-
Triclopyr*	mg/kg	0.01		<0.01	-	-	-
Moisture Content Method: AN002 Tested: 3/7/2023							
% Moisture	%w/w	1		**17.1**	-	-	-

Parameter	Units	LOR	Sample Number: ME335307.005 Sample Matrix: Soil Sample Date: 27 Jun 2023 Sample Name: SE249904.005	ME335307.006 Soil 27 Jun 2023 SE249904.006	ME335307.007 Soil 27 Jun 2023 SE249904.007	ME335307.008 Soil 27 Jun 2023 SE249904.008
Pesticides / Herbicides in Soils by LC-MS/MS MA-1569.SL.01 Method: MA1569 Tested: 5/7/2023						
Bromoxynil*	mg/kg	0.5	<0.5	-	-	-
4-Chlorophenocy acetic acid (4-CPA)*	mg/kg	0.5	<0.5	-	-	-
Clopyralid*	mg/kg	0.5	<0.5	-	-	-
2,4-D [(2,4-Dichlorophenoxy) acetic acid]*	mg/kg	0.01	<0.01	-	-	-
2,4-DB*	mg/kg	0.5	<0.5	-	-	-
2,6-D*	mg/kg	0.5	<0.5	-	-	-
Dicamba*	mg/kg	0.01	<0.01	-	-	-
Dichloroprop / Dichlorprop-P*	mg/kg	0.01	<0.01	-	-	-
Dinoseb*	mg/kg	0.5	<0.5	-	-	-
Fluroxypyr*	mg/kg	0.5	<0.5	-	-	-
Ioxynil*	mg/kg	0.5	<0.5	-	-	-
MCPA*	mg/kg	0.01	<0.01	-	-	-
MCPB*	mg/kg	0.01	<0.01	-	-	-
mecoprop*	mg/kg	0.01	<0.01	-	-	-
Picloram*	mg/kg	0.01	<0.01	-	-	-
2,4,5-T*	mg/kg	0.01	<0.01	-	-	-
2,4,5-TP*	mg/kg	0.5	<0.5	-	-	-
2,4,6-Trichlorophenoxy acetic acid*	mg/kg	0.5	<0.5	-	-	-
Triclopyr*	mg/kg	0.01	<0.01	-	-	-
Moisture Content Method: AN002 Tested: 3/7/2023						
% Moisture	%w/w	1	**22.2**	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME335307.009 Soil 27 Jun 2023 SE249904.009	ME335307.010 Soil 27 Jun 2023 SE249904.010	ME335307.011 Soil 27 Jun 2023 SE249904.011	ME335307.012 Soil 27 Jun 2023 SE249904.012
Pesticides / Herbicides in Soils by LC-MS/MS MA-1569.SL.01 Method: MA1569 Tested: 6/7/2023						
Bromoxynil*	mg/kg	0.5	-	-	-	-
4-Chlorophenocy acetic acid (4-CPA)*	mg/kg	0.5	-	-	-	-
Clopyralid*	mg/kg	0.5	-	-	-	-
2,4-D [(2,4-Dichlorophenoxy) acetic acid]*	mg/kg	0.01	-	-	-	-
2,4-DB*	mg/kg	0.5	-	-	-	-
2,6-D*	mg/kg	0.5	-	-	-	-
Dicamba*	mg/kg	0.01	-	-	-	-
Dichloroprop / Dichlorprop-P*	mg/kg	0.01	-	-	-	-
Dinoseb*	mg/kg	0.5	-	-	-	-
Fluroxypyr*	mg/kg	0.5	-	-	-	-
Ioxynil*	mg/kg	0.5	-	-	-	-
MCPA*	mg/kg	0.01	-	-	-	-
MCPB*	mg/kg	0.01	-	-	-	-
mecoprop*	mg/kg	0.01	-	-	-	-
Picloram*	mg/kg	0.01	-	-	-	-
2,4,5-T*	mg/kg	0.01	-	-	-	-
2,4,5-TP*	mg/kg	0.5	-	-	-	-
2,4,6-Trichlorophenoxy acetic acid*	mg/kg	0.5	-	-	-	-
Triclopyr*	mg/kg	0.01	-	-	-	-
Moisture Content Method: AN002 Tested: 5/7/2023						
% Moisture	%w/w	1	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME335307.013 Soil 27 Jun 2023 SE249904.013	ME335307.014 Soil 27 Jun 2023 SE249904.014	ME335307.015 Soil 27 Jun 2023 SE249904.015	ME335307.016 Soil 27 Jun 2023 SE249904.016
Pesticides / Herbicides in Soils by LC-MS/MS MA-1569.SL.01 Method: MA1569 Tested: 6/7/2023							
Bromoxynil*	mg/kg	0.5		-	<0.5	-	-
4-Chlorophenocy acetic acid (4-CPA)*	mg/kg	0.5		-	<0.5	-	-
Clopyralid*	mg/kg	0.5		-	<0.5	-	-
2,4-D [(2,4-Dichlorophenoxy) acetic acid]*	mg/kg	0.01		-	<0.01	-	-
2,4-DB*	mg/kg	0.5		-	<0.5	-	-
2,6-D*	mg/kg	0.5		-	<0.5	-	-
Dicamba*	mg/kg	0.01		-	<0.01	-	-
Dichloroprop / Dichlorprop-P*	mg/kg	0.01		-	<0.01	-	-
Dinoseb*	mg/kg	0.5		-	<0.5	-	-
Fluroxypyr*	mg/kg	0.5		-	<0.5	-	-
Ioxynil*	mg/kg	0.5		-	<0.5	-	-
MCPA*	mg/kg	0.01		-	<0.01	-	-
MCPB*	mg/kg	0.01		-	<0.01	-	-
mecoprop*	mg/kg	0.01		-	<0.01	-	-
Picloram*	mg/kg	0.01		-	<0.01	-	-
2,4,5-T*	mg/kg	0.01		-	<0.01	-	-
2,4,5-TP*	mg/kg	0.5		-	<0.5	-	-
2,4,6-Trichlorophenoxy acetic acid*	mg/kg	0.5		-	<0.5	-	-
Triclopyr*	mg/kg	0.01		-	<0.01	-	-
Moisture Content Method: AN002 Tested: 5/7/2023							
% Moisture	%w/w	1		-	**13.6**	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME335307.017 Soil 27 Jun 2023 SE249904.017	ME335307.018 Soil 27 Jun 2023 SE249904.018	ME335307.019 Soil 27 Jun 2023 SE249904.019	ME335307.020 Soil 27 Jun 2023 SE249904.020
Pesticides / Herbicides in Soils by LC-MS/MS MA-1569.SL.01 Method: MA1569 Tested: 6/7/2023							
Bromoxynil*	mg/kg	0.5		-	<0.5	-	-
4-Chlorophenocy acetic acid (4-CPA)*	mg/kg	0.5		-	<0.5	-	-
Clopyralid*	mg/kg	0.5		-	<0.5	-	-
2,4-D [(2,4-Dichlorophenoxy) acetic acid]*	mg/kg	0.01		-	<0.01	-	-
2,4-DB*	mg/kg	0.5		-	<0.5	-	-
2,6-D*	mg/kg	0.5		-	<0.5	-	-
Dicamba*	mg/kg	0.01		-	<0.01	-	-
Dichloroprop / Dichlorprop-P*	mg/kg	0.01		-	<0.01	-	-
Dinoseb*	mg/kg	0.5		-	<0.5	-	-
Fluroxypyr*	mg/kg	0.5		-	<0.5	-	-
Ioxynil*	mg/kg	0.5		-	<0.5	-	-
MCPA*	mg/kg	0.01		-	<0.01	-	-
MCPB*	mg/kg	0.01		-	<0.01	-	-
mecoprop*	mg/kg	0.01		-	<0.01	-	-
Picloram*	mg/kg	0.01		-	<0.01	-	-
2,4,5-T*	mg/kg	0.01		-	<0.01	-	-
2,4,5-TP*	mg/kg	0.5		-	<0.5	-	-
2,4,6-Trichlorophenoxy acetic acid*	mg/kg	0.5		-	<0.5	-	-
Triclopyr*	mg/kg	0.01		-	<0.01	-	-
Moisture Content Method: AN002 Tested: 5/7/2023							
% Moisture	%w/w	1		-	**12.0**	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME335307.021 Soil 27 Jun 2023 SE249904.021	ME335307.022 Soil 27 Jun 2023 SE249904.022	ME335307.023 Soil 27 Jun 2023 SE249904.023	ME335307.024 Soil 27 Jun 2023 SE249904.024
Pesticides / Herbicides in Soils by LC-MS/MS MA-1569.SL.01 Method: MA1569 Tested: 6/7/2023							
Bromoxynil*	mg/kg	0.5		-	<0.5	-	-
4-Chlorophenocy acetic acid (4-CPA)*	mg/kg	0.5		-	<0.5	-	-
Clopyralid*	mg/kg	0.5		-	<0.5	-	-
2,4-D [(2,4-Dichlorophenoxy) acetic acid]*	mg/kg	0.01		-	<0.01	-	-
2,4-DB*	mg/kg	0.5		-	<0.5	-	-
2,6-D*	mg/kg	0.5		-	<0.5	-	-
Dicamba*	mg/kg	0.01		-	<0.01	-	-
Dichloroprop / Dichlorprop-P*	mg/kg	0.01		-	<0.01	-	-
Dinoseb*	mg/kg	0.5		-	<0.5	-	-
Fluroxypyr*	mg/kg	0.5		-	<0.5	-	-
Ioxynil*	mg/kg	0.5		-	<0.5	-	-
MCPA*	mg/kg	0.01		-	<0.01	-	-
MCPB*	mg/kg	0.01		-	<0.01	-	-
mecoprop*	mg/kg	0.01		-	<0.01	-	-
Picloram*	mg/kg	0.01		-	<0.01	-	-
2,4,5-T*	mg/kg	0.01		-	<0.01	-	-
2,4,5-TP*	mg/kg	0.5		-	<0.5	-	-
2,4,6-Trichlorophenoxy acetic acid*	mg/kg	0.5		-	<0.5	-	-
Triclopyr*	mg/kg	0.01		-	<0.01	-	-
Moisture Content Method: AN002 Tested: 5/7/2023							
% Moisture	%w/w	1		-	**19.0**	-	-

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

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

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB063471	%w/w	1	3%

Pesticides / Herbicides in Soils by LC-MS/MS MA-1569.SL.01 Method: MA1569

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
Bromoxynil*	LB063572	mg/kg	0.5	<0.5	0%	NA	NA	NA
4-Chlorophenocy acetic acid (4-CPA)*	LB063572	mg/kg	0.5	<0.5	0%	NA	NA	NA
Clopyralid*	LB063572	mg/kg	0.5	<0.5	0%	NA	NA	NA
2,4-D [(2,4-Dichlorophenoxy) acetic acid]*	LB063572	mg/kg	0.01	<0.01	0%	NA	NA	NA
2,4-DB*	LB063572	mg/kg	0.5	<0.5	0%	NA	NA	NA
2,6-D*	LB063572	mg/kg	0.5	<0.5	0%	NA	NA	NA
Dicamba*	LB063572	mg/kg	0.01	<0.01	0%	NA	NA	NA
Dichloroprop / Dichlorprop-P*	LB063572	mg/kg	0.01	<0.01	0%	NA	NA	NA
Dinoseb*	LB063572	mg/kg	0.5	<0.5	0%	NA	NA	NA
Fluroxypyr*	LB063572	mg/kg	0.5	<0.5	0%	NA	NA	NA
Ioxynil*	LB063572	mg/kg	0.5	<0.5	0%	NA	NA	NA
MCPA*	LB063572	mg/kg	0.01	<0.01	0%	NA	NA	NA
MCPB*	LB063572	mg/kg	0.01	<0.01	0%	NA	NA	NA
mecoprop*	LB063572	mg/kg	0.01	<0.01	0%	NA	NA	NA
Picloram*	LB063572	mg/kg	0.01	<0.01	0%	NA	NA	NA
2,4,5-T*	LB063572	mg/kg	0.01	<0.01	0%	NA	NA	NA
2,4,5-TP*	LB063572	mg/kg	0.5	<0.5	0%	NA	NA	NA
2,4,6-Trichlorophenoxy acetic acid*	LB063572	mg/kg	0.5	<0.5	0%	NA	NA	NA
Triclopyr*	LB063572	mg/kg	0.01	<0.01	0%	NA	NA	NA

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.
MA-1569	This method is intended for the analysis of a diverse range of pesticides and herbicides by Liquid Chromatography using a Tandem Mass Spectrometry detector (LC-MS/MS). Due to the diverse nature of the analytes covered in this method each analyte requires its own analytical acquisition method thus the sample is run multiple times according to the analyte list requested. Soil and solid samples are extracted with ACN and extracts are filtered then directly injected onto LC -MS/MS using selective ion monitoring.

FOOTNOTES

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

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

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

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

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

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

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

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

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

Appendix G.
External review

02 6161 1762

contact@murrang.com.au

www.murrang.com.au
ABN 96 162 928 958

Detailed Site Investigation Checklist

Report Title: Limited site investigation, Lot 3 DP1118635, 41 King Street, Tarago, NSW: Part one (Murrang Earth Sciences, reference MES2167-R02)

Date: 21 July 2023

The following checklist template has been adopted from the NSW EPA *Consultants reporting on contaminated land Contaminated Land Guidelines*, May 2020.

Compliance with NSW EPA (2020) '*Consultants Reporting on Contaminated Land*'

Report Section	Required Information	Present Yes/No/NA
Document Control	Date, Version Number, author and reviewer (including certification details) and who commissioned the report	Yes
Executive Summary	Background	Yes
	Objectives of the Investigation	Yes
	Scope of Work	Yes
	Summary of key findings	Yes
	Summary of conclusions and recommendations	Yes
Objectives	The objectives of the investigation / report and the broader objectives for the site/investigation	Yes
Scope of Work	Scope of work performed (and work not undertaken where relevant)	Yes
Site Identification	Site identification and detail items from ASC NEPM Field Checklist 'Site Information' sheet	Yes (See Comments Below)
Site History	Site history items from the ASC NEPM Field Checklist 'Site Information Sheet'	Yes
Site Condition and Surrounding Environment	Site condition and surrounding environment items from ASC NEPM Field Checklist 'Site Information' sheet	Yes
Conceptual Site Model	Regional and local geology, hydrogeology and hydrology items from the ASC NEPM Field Checklist 'CSM' sheet	Yes
	List of Potential contaminants of potential concern	Yes
	Potential and known sources of contamination, on- and offsite	Yes
	Mechanism of contamination (e.g. top-down spill, subsurface release from tank or pipe, atmospheric deposition etc.)	Yes

	Potentially affected environmental media	Yes
	Consideration of spatial and temporal variations	Yes
	Actual or potential exposure pathways including preferential pathways	Yes
	Human and ecological receptors	Yes
	Frequency of exposure	Yes
	Linkage of source, pathway and receptor assessed in terms of potentially complete pathways and likelihood	Yes
	Discussion on multiple lines of evidence (for complex sites)	NA
Data Quality Objectives	Step 1: State the Problem	Yes
	Step 2: Identify the decision/goal of the study	Yes
	Step 3: Identify the information inputs	Yes
	Step 4: Define the boundaries of the study	Yes
	Step 5: Develop the analytical approach	Yes
	Step 6: Specify performance and acceptance criteria	Yes
	Step 7: Develop the plan for obtaining data	Yes
Sampling and Analysis Quality Plan and Sampling Methodology		Yes
Quality Assurance / Quality Control	Details of Sampling Team	Yes
	References to sampling plan/method, including any deviations from it – sampling and analysis quality plan	Yes
	Any information that could be required to evaluate measurement uncertainty for subsequent testing (analysis)	Yes
	Decontamination procedures carried out between sampling events	Yes
	Logs for each sample collected, including date, time, locations (with GPS Coordinates if possible), sampler, duplicate samples, chemical analyses to be performed, site observations and weather/environmental (i.e. surroundings) conditions. Include any diagrams, maps, photos.	Yes
	Chain of Custody fully identifying for each sample – the sampler, nature of the sample, collection date, analyses to be performed, sample preservation method, departure time from the site and dispatch couriers (where applicable).	Yes
	Field quality assurance/quality control results (e.g. field blank, rinsate blank, trip blank, laboratory prepared trip spike)	Yes
	Sample splitting techniques – subsampling, containers/preservation (ensure unique ID for subsequent samples provided)	Yes
	Statement of duplicate frequency	Yes

	Background sample results	NA
	Field instrument calibrations	NA
	Sampling devices and equipment	Yes
	A copy of signed chain of custody forms acknowledging receipt date, time and temperature and identity of samples including shipments	Yes
	Recording of holding times and a comparison with method specifications	Yes
	Analytical methods used, including any deviations	Yes
	Laboratory performance for the analytical method using inter-laboratory duplicates.	Yes
	Surrogates and spiles used throughout the full method process, or only in parts. Results are corrected for the recovery.	Yes
	A list of what spikes and surrogates were run with their recoveries and acceptance criteria	Yes
	Practical Quantification Limits (PQL)	Yes
	Reference Laboratory control sample (LCS) and check results	Yes
	Laboratory duplicate results	Yes
	Laboratory blank results	Yes
	Results are within control chart limits	Yes
	Evaluation of all quality assurance/quality control information listed above against the stated data quality objectives including a quality assurance/control data evaluation	Yes
Field and Analytical Results	Summary of Previous Results	NA
	A table of analytical results that:	Yes
	Shows all essential details such as sample identification numbers and sampling depth	Yes
	Shows assessment criteria	Yes
	Highlights all results exceeding any assessment criteria	Yes
	Summary/discussion of the analytical results table	Yes
	Sample descriptions for all media where applicable (e.g. soil, sediment, surface water, groundwater, soil vapour, ground gas, indoor air and biota).	Yes
	Test pit or bore logs (well construction details where appropriate for example groundwater level expressed in Australian height datum)	Yes
	Site plan showing all sample locations	Yes
	Site plan(s) showing the extent of soil and groundwater contamination (if known)	Yes
Conclusions and Recommendations	Summary of all findings and discussion of results	Yes
	Conclusions addressing the stated objectives	Yes
	Assumptions used in reaching the conclusions	No
	Extent of uncertainties in the results (quantified where possible)	No

	Recommendations for further work (if appropriate)	Yes
References	References for all guidelines and previous investigations.	Yes

Comments

Given the potential risk contamination to groundwater may pose to receptors such as the residents of Tarago, discussion regarding the potential risk to groundwater should be included in Section 6.2 to reflect that there is no risk and the basis that this conclusion can be drawn.

Closing

Based on the information provided in the reviewed report the objectives of the investigation are met and the conclusions drawn from the analysed data are acceptable.

I trust that the results of this review meet your immediate requirements. However, should you have any queries or wish to discuss any points in greater detail, please do not hesitate to contact the undersigned.

Chris Gunton
Principal Environmental Scientist
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