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28 April 2022

Daniel Owe-Young
Project Manager
Hepburn Shire Council
76 Vincent Street
Daylesford VIC 3460

Dear Daniel,

Re: Auditor Review of Risk Assessment Report
Glenlyon Recreation Reserve, Suttons Lane, Glenlyon VIC

1. Introduction and Objective

Senversa Pty Ltd (Senversa) has been engaged by Hepburn Shire Council (the Council) for the services of Kristi Hanson, an EPA Victoria appointed environmental auditor, to review a risk assessment report prepared for the Glenlyon Recreational Reserve (Glenlyon Reserve) located at Suttons Lane, Glenlyon Victoria (the site).

The objective of this letter is to review and provide commentary on approach and conclusion of the risk assessment report prepared for the Glenlyon Reserve to evaluate the environmental and human health risk from historical clay target shooting activities. The risk assessment forms part of the clean up strategy detailed in the auditor verified Clean Up Plan (CUP) (see **Section 2** below).

As presented in **Attachment A**, the document that is subject of the review is:

- Kleinfelder (2022) *Risk Assessment Report – Glenlyon Recreation Reserve, Suttons Lane, Glenlyon Victoria 3461*, revision 1, version 3.0 dated 27 April 2022 (the risk assessment report).

The Council engaged Kleinfelder Australia Pty Ltd (Kleinfelder) as their environmental consultant for the site since 2020.

2. Background

The Glenlyon Reserve, approximately 21.7 hectare, is Crown Land managed by Department of Environment, Land, Water and Planning (DELWP) and is leased by Hepburn Shire Council. It is zoned Public Park and Recreation (PPRZ).

The reserve has been used for recreational activities since the late 1800s. The Daylesford Field and Game Club commenced clay target shooting activities at the site in the late 1970s and shooting ceased in 2020 under the Council's instruction, once it was identified that environmental pollution was identified.

An amended Clean Up Notice (CUN) no. 90011425 was issued for the site by EPA Victoria on 24 May 2021. This CUN required a CUP, verified by an EPA-appointed environmental auditor, to be prepared and submitted to EPA. This requirement was addressed with the following documents submitted to EPA on 11 October 2021:

- Kleinfelder (2021) *Clean Up Plan – Glenlyon Recreational Reserve*, revision 3 dated 7 October 2021. This is hereafter referred to as 'the CUP'.
- Senversa (2021) *Clean Up Plan Verification and Assessment Report, Glenlyon Recreation Reserve, Suttons Lane, Glenlyon VIC*, ref: M18521_012_RPT_Rev0, dated 11 October 2021.

Subsequently on 20 January 2022, CUN no. 90011425 was revoked by EPA Victoria.

The CUP collated and reviewed environmental assessment data for the site and concluded that risks to on-site and off-site human and ecological receptors posed by site contamination associated with shooting activities are low and acceptable with the possible exception of human health risks to on-site recreational users due to direct contact exposure to benzo(a)pyrene toxic equivalent quotient (BaP TEQ) concentrations in shallow soils within the oval/racecourse and target launch areas of the site. Furthermore, additional sampling of surface water from Loddon River was proposed to confirm the CUP's conclusion that the surface water has not been impacted. Therefore, the Stage 2 of the clean up strategy detailed in Table 5.1 of the CUP comprised:

- an additional round of surface water sampling of the Loddon River, on-site soak and associated drain to the Loddon River and the unnamed tributary running through the southern portion of the site.
- a risk assessment to evaluate the potential impact to human health whereby a site-specific trigger level (SSTL) for BaP TEQ in soil is derived using published literature.

The CUP also required the risk assessment report to be reviewed by an environmental auditor (i.e., this letter).

The risk from clay target shooting activities that are to recommence at the site are managed through an Environmental Management Plan (EMP) for the ongoing use of the site for shooting activities. As this is not related to clean up activities or the CUP, this is excluded from the scope of this review letter. The auditor notes that an 'Environmental Management Plan, Daylesford Field and Game Association Inc., Glenlyon Recreation' dated 2021 prepared by Kleinfelder (the EMP) was referenced in the risk assessment report and is understood to have been provided to EPA for review. The EMP has not been sighted by the auditor.

3. Documents reviewed

The auditor was provided the following documents prepared by Kleinfelder for review:

- Sampling and Analysis Quality Plan – Surface Water & Soil, Glenlyon Recreation Reserve, Suttons Lane, Glenlyon, VIC 3461, dated 13 December 2021.
- Risk Assessment Report – Glenlyon Recreation Reserve, Suttons Lane, Glenlyon Victoria 3461, draft, version 1.0 dated 23 February 2022.
- Risk Assessment Report – Glenlyon Recreation Reserve, Suttons Lane, Glenlyon Victoria 3461, final, version 2.0 dated 25 March 2022.
- Risk Assessment Report – Glenlyon Recreation Reserve, Suttons Lane, Glenlyon Victoria 3461, revision 1, version 3.0 dated 27 April 2022. (Refer to **Attachment A**.)

The auditor reviewed and provided comments to Kleinfelder on the above reports for their consideration in the sampling works and the final version of the risk assessment report.

4. Auditor's Review

4.1 Surface Water Sampling Works

The risk assessment report discusses an additional surface water sampling event conducted in December 2021 at the site and adjacent Loddon River as part of the Stage 2 clean up strategy of the CUP.

The confirmatory surface water sampling was conducted to address an identified data gap in the CUP that only one surface water monitoring event had been conducted at a time when water was not flowing in the open spoon drain or unnamed tributary leading from the site to the Loddon River. Additional sampling to assess water quality that may be discharging from the site to the Loddon River was therefore warranted. The scope of work included:

- Surface water sampling at:
    - the Loddon River approximately 2 m up-stream and 2 m down-stream from the site's northern discharge point (SW01_1 and SW01_2).
    - the unnamed tributary on-site in the southern portion of the site (SW04) and the Loddon River down-stream of site's southern (unnamed tributary) discharge point (SW02).
    - the on-site soak (SW03).
    - the Loddon River (SW05) upstream of the site as a background sample.
- Laboratory analysis of surface water samples for metals (arsenic, cadmium, chromium, copper, lead, nickel and zinc) and PAHs.

The sampling locations are shown in Figure 4 of the risk assessment report and further details of the field investigations and results are discussed in Section 4.2 of the risk assessment report. The analytical results (including the previous 2020 sampling results discussed in the CUP) are summarised in Table 14 to 16 of the risk assessment report.

The surface water sampling results indicated that contaminants of concern associated with shooting activities (metals and PAHs) were below detection limits and/or below relevant health and ecological screening levels, with the exception of copper in location SW03 (the on-site soak). Copper was reported in SW03 at 0.005 mg/L, which exceeded the relevant objective for water-dependent ecosystems and species (95% species protection) of 0.0014 mg/L. However, the on-site 'soak' forms part of the surface water drainage system and is an artificial drainage feature. The water in the soak at the time of sampling was stagnant and not flowing and had likely been subject to evaporative concentration effects. The results from this location are therefore not representative of concentrations that would discharge from the site, i.e. discharging concentrations from the soak and/or other parts of the site would be expected to be further diluted due to rainfall and stormwater runoff. The auditor also notes that the concentration in the soak (0.005 mg/L) was within the range reported in the shallow alluvial aquifer at the site (0.005 to 0.015 mg/L), and which has been concluded to be naturally occurring in the previous CUP. On this basis, the reported copper concentration in the soak is not indicative of contamination. Copper concentrations in other sampled locations, including the Loddon River, were below relevant objectives.

Overall, the auditor considers that:

- The scope and methodology of the additional surface water sampling was adequate to address the requirement and intent of sampling, i.e. to assess surface water quality that may discharge from the site.
- The results of the surface water sampling did not identify contamination from shooting activities in surface water discharging to, or within, the Loddon River.
- A slightly elevated copper concentration reported in SW03 (the on-site soak) is consistent with shallow alluvial groundwater concentrations in which naturally elevated copper has been identified and does not represent contamination.

4.2 Soil Sampling

The risk assessment report discusses an additional soil sampling event conducted in December 2021 at the site and adjacent Loddon River as part of the Stage 2 clean up strategy of the CUP.

The objective of the additional soil sampling was to assess whether elevated PAH concentrations reported during a previous investigation by Beveridge Williams (in 2019) were repeatable, and whether similar concentrations were widespread near those locations or spatially variable over small distances. The additional soil data collected was used to supplement the contamination characterisation presented in the CUP and to revise the conceptual site model (CSM) prepared for the site (refer to Section 6 of the risk assessment report).

The scope of work included:

- Soil sampling at:
    - 18 targeted soil bores around the three existing soil sample locations (SS15, SS27 and SS29) from 2019 which reported the highest concentrations of BaP TEQ. Six soil bores were advanced around each of the three former locations in a circle approximately 1 m from the original bore locations.
    - Collection and analysis of a grab soil sample at the on-site holding basin (soak) (SW03).
    - Collection and analysis of and surface clay target fragments at the on-site holding basin (soak) (S1).
- Laboratory analysis of soil samples for PAHs.

It is noted that samples were collected at shallow depth (0 to 0.1 m) and at 0.3 to 0.5 m bgl, however only shallow soil samples were analysed.

The sampling locations are shown in Figure 6 of the risk assessment report and further details of the field investigations and results are discussed in Section 4.1 of the risk assessment report. The analytical results are summarised in Table 4D of the risk assessment report.

The soil PAH concentrations in the sampled areas were reported to be quite variable across the small spatial scales sampled around each former location, and similar to or lower than the previously reported concentration, i.e.:

- SS15:
    - Original BaP TEQ result: 120 mg/kg
    - Re-sample concentrations: 2.7 to 25 mg/kg
- SS27:
    - Original BaP TEQ result: 25 mg/kg
    - Re-sample concentrations: <0.5 to 15 mg/kg
- SS29:
    - Original BaP TEQ result: 48 mg/kg
    - Re-sample concentrations: <0.5 to 52 mg/kg

The BaP TEQ concentration in soil collected from the soak (SW03) was below laboratory limits of reporting (<0.5 mg/kg).

The BaP TEQ concentration in a sample of clay target fragments in the soak area (S1) was 150 mg/kg, i.e. similar to that reported in SS15 in 2019. This provides a line of evidence that concentrations in this range are likely indicative of whole clay target fragments, rather than soil particles.

4.3 Quality of Information

The auditor has reviewed the surface water and soil sampling methodology and data quality indicators to assess whether the works were conducted in accordance with relevant guidance including:

- *Australian Standard (AS 4482.1) - Guide to the investigation and sampling of the sites with potentially contaminated soil, Part 1: Non-volatile and semi-volatile compounds* (Standards Australia, 2005).
- *Australian Standard (AS 4482.2) - Guide to the sampling and investigation of potentially contaminated soil, Part 2: Volatile substances* (Standards Australia, 1999).
- *National Environment Protection (Assessment of Site Contamination) Measure 1999* (National Environment Protection Council, 2013).
- *Industrial Waste Resource Guidelines: Sampling and Analysis of Waters, Wastewaters, Soils and Wastes* (EPA Publication IWRG701, June 2009).

The auditor's observations and comments in relation to the works conducted are summarised in **Table 4.1** below.

Table 4.1: Data Quality Review

Component of Field Investigation	Auditor Comments – Surface Water	Auditor Comments - Soil
Sample locations / coverage	Samples were collected in the receiving surface water body (Loddon River) upstream and downstream of drainage locations from the site, in the on-site soak which represents accumulated stormwater runoff from the racecourse area of the site (where shooting related contamination has been identified) and in the unnamed tributary leading from the site to the Loddon River. These locations are appropriate for the investigation objective of assessing surface water quality that may be discharging from the site to the Loddon River.	Sample locations were targeted to areas where high PAH concentrations had been previously reported, consistent with the stated objectives.
Sample collection techniques	Collected using a telescopic water sampler approximately 0.3 to 0.4 m below water surface (where possible), or just below water surface for shallower waters (soak; SW03). Samples for metal analysis were filtered through a 0.45 µm filter. The techniques are considered appropriate for the purposes of the investigation.	Bores advanced by hand auger and soil samples collected directly from hand auger with gloved hand and placed into laboratory-supplied sample containers. The method is appropriate for the purposes of the investigation and the nature of the contaminants of concern (non- to semi-volatile PAHs).
Sample equipment decontamination	Re-usable equipment was decontaminated between samples using Decon90. Fresh nitrile gloves were used for every sample. The auditor considers that the decontamination procedures were consistent with relevant guidelines and adequate for the purposes of the investigation.	
Field measurements and observations	Field water quality parameters (temperature, pH, redox potential, dissolved oxygen, electrical conductivity, colour, odour and turbidity) were recorded at each sample location. A calibration certificate for the water quality meter was provided in the report.	Soil descriptions were noted in the field and documented in bore logs for each location sampled. Photo-ionisation detector (PID) screening of soils was not conducted, however the auditor agrees that this is not required to meet the investigation objectives based on the non- to semi-volatile nature of the contaminants of interest (PAHs).

Component of Field Investigation	Auditor Comments – Surface Water	Auditor Comments - Soil
Field documentation	Field documentation including field notes, bore logs and chain of custody records were completed to a satisfactory standard to enable the auditor to interpret the data.	
Sample handling, preservation and storage	Sample receipt advice from the laboratories indicated that samples were received in good condition, in appropriately preserved containers for relevant analytes.	
Number and type of field quality control samples	One field (intra-laboratory) duplicate, one secondary (inter-laboratory) duplicate and one rinsate blank sample were collected for both surface water and soil investigations. The frequency and number of quality control samples is consistent with relevant guidance (AS4482.1, ASC NEMP) and appropriate for the investigation.	
Selection of chemical analytes	The selected analytes (metals and PAHs in surface water and PAHs in soil) were those which had been identified in the CUP to require further delineation and investigation and are considered appropriate.	
Laboratory quality assurance and quality control (QA/QC) results	Kleinfelder discusses the laboratory QA/QC program and results in Section 5.1 of the risk assessment report. While some deviations from acceptance criteria were noted (primarily insufficient frequency of some QC samples by the secondary laboratory, and holding time non-compliance for some repeat analysis requests), the majority of laboratory QC results were within acceptance criteria and indicated that the reported data were representative of concentrations within the samples received.	
Field quality control results	While some relative percent differences (RPDs) exceeded adopted acceptance criteria for PAHs in soil, this was attributed by Kleinfelder to soil heterogeneity and is considered typical for heterogeneous fill soil matrices with clay target inclusions that will vary in abundance over short distances. Sufficient sampling and repeat analysis have been conducted to characterise this heterogeneity, thus the RPD non-conformances do not affect the useability of the data.	

Overall, the auditor considers that the sampling undertaken was sufficient for the stated objectives of the investigation, and the quality and reliability of information generated from the investigations were sufficient for the purposes of the assessment.

4.4 Risk Assessment

In order to assess the risk posed by elevated PAH concentrations at the site (as indicated by BaP TEQ), Kleinfelder derived site-specific target levels (SSTLs), which considered both the anticipated low bioavailability of BaP TEQ contamination at the site, and the frequency and nature of site use.

The risk assessment methodology was conducted in accordance with the National Environment Protection (Assessment of Site Contamination) Amendment Measure as amended in 2013 (the NEPM).

Table 4.2 summarises the auditor's review of the key aspects of the risk assessment.

Table 4.2: Summary of Auditor's Review of Risk Assessment

Aspects of Risk Assessment	Assessor's Approach	Auditor's Comments
Overall approach	Kleinfelder utilised the HIL calculation spreadsheet published in the ASC NEPM toolbox to derive site-specific HILs for BaP TEQ. The derivation used the same default assumptions as adopted in the ASC NEPM for recreational land use, with the exception of: • Oral and dermal bioavailability / bioaccessibility of BaP TEQ. • Exposure patterns / frequency by recreational users of the site.	The approach is considered appropriate and consistent with relevant ASC NEPM guidance, which states that PAHs in soil have been demonstrated in to be much lower than 100%, and that a site-specific assessment of bioavailability can be undertaken where required.
Site-specific oral and dermal bioaccessibility	Kleinfelder conducted a literature review which identified that: • PAHs in new and weathered clay targets are tightly bound in targets, and when present in soil are associated with clay target fragments rather than soil/sediment particles. • Benzo(a)pyrene relative oral bioavailability in soils contaminated with clay targets has been measured to range from 8 to 14%, and that these values can be conservatively applied to other carcinogenic PAHs in clay targets. Kleinfelder adopted the maximum value in this range to apply to BaP TEQ. • Dermal adsorption fractions for PAHs in clay target impacted soils ranged from 0 to 3.6%. The mean values across all compounds ranged from 0.28% to 1.4% and did not differ between compounds. Kleinfelder selected a value of 1.3% (which was the maximum reported for benzo(a)pyrene) to apply to BaP TEQ.	The adopted bioaccessibility values are considered appropriate and consistent with the cited literature.

Aspects of Risk Assessment	Assessor's Approach	Auditor's Comments
Site-specific exposure parameters	Kleinfelder considered that reduction of exposure frequency from the NEPM default of 365 days/year to 2 days/week (104 days per year) was likely to be protective of receptors at the site, as it was considered highly unlikely that users of the site would access the PAH impacted area every day of the year for 2 hours per day, for multiple years in a row (as is assumed in derivation of the NEPM HIL).	While the auditor agrees that it is unlikely any individual receptor would access PAH-impacted areas of the site more than 2 days per week, the possibility of some individuals utilising the oval / racetrack every day (e.g. for dog walking or recreational walking) cannot be entirely ruled out. However, the auditor also notes that the 95% upper confidence limit (UCL) on the mean concentration across the PAH-impacted area of the site is below the derived SSTL for 365 day/year exposure – thus risks to recreational users are considered low and acceptable even where the site is visited every day. The auditor also notes that the HIL for BaP TEQ applies age dependant adjustment factors (ADAFs) for early life exposure to these compounds, with the heaviest weighting applied to exposure during the first 2 years. Thus where children under 2 years of age have no, or negligible exposure to impacted soils, the SSTL would increase substantially (e.g. if very young children under 2 did not access the site, but children from aged 2 and up were present in the contaminated area every day of the year, the SSTL would be 60 mg/kg, which is the same as the SSTL derived by Kleinfelder for a scenario where children and adults frequent the site from birth two times per week). Overall, while some individuals may be present more than 2 times per week, these more frequent exposures would occur only for older children and/or adults, which would result in a similar SSTL to that derived by Kleinfelder for 2 days/week exposure by all age groups.
Derived SSTLs	Kleinfelder derived the following SSTLs for BaP TEQ: • Based on reduced oral and dermal bioavailability (14% and 1.3% respectively): ▪ 20 mg/kg where receptors are exposed in early-life / from birth. ▪ 50 mg/kg where receptors are exposed only as adults. • Based on reduced oral and dermal bioavailability and reduced exposure frequency (2 days / week): ▪ 60 mg/kg where receptors are exposed in early-life / from birth. ▪ 200 mg/kg where receptors are exposed only as adults.	The SSTLs were derived correctly and reflect the adopted assumptions. As noted above, the 95% UCL BaP TEQ concentration in surface soil at the site (10.6 mg/kg) is below even the lowest of the derived SSTLs (20 mg/kg). BaP TEQ concentrations in only 3 locations across the racecourse / oval exceeded this SSTL, and these elevated results likely reflect residual clay target fragments within the soil matrix. It is noted that Kleinfelder conducted a statistical comparison to the higher SSTL of 60 mg/kg, and also concluded that site concentrations were below this concentration. However, the auditor considers that average concentrations to which receptors are likely to be exposed at the site are also below the lower SSTL of 20 mg/kg, and that risks to receptors utilising the site are low and acceptable.

In summary, the auditor considers the risk assessment and SSTL derivation was conducted in accordance with relevant guidelines and the assumptions and parameters used in deriving the SSTL were appropriate and/or suitable conservative. The auditor also notes that the most conservative SSTL of 20 mg/kg BaP TEQ, which allows for individuals to access the PAH-impacted parts of the site 365 days per year from birth, is not exceeded by the 95% UCL BaP TEQ concentration in soils across the racetrack / oval portion of the site. While some isolated soil samples had reported concentrations exceeding this value, these higher concentrations likely reflect residual clay target fragments within the soil matrix, and have very low bioavailability (and hence low toxicity).

Overall, the auditor concurs with the conclusions of the risk assessment that the health risk posed by contamination from the historical clay targeting shooting activities conducted at the site is low and acceptable.

5. Implication for the Clean Up Strategy

The risk assessment concluded that "*no further risk assessment, remedial actions or further management controls are required for the site based on its going use as a public recreational reserve*" (page 32). Furthermore, the current short-term management measures whereby selected portion of the site has temporary fencing with signage installed to prevent access to the areas of contamination concern (i.e., Stage 1 of the clean up strategy of the CUP) are also concluded to be no longer required. However, if clay shooting activities are to resume at the site, the risk mitigation measures stipulated in the EMP should be employed.

Overall, based on the field investigations and risk assessment works conducted at the site to date, the auditor concurs with the conclusions of the risk assessment. This means that Stage 3 (triggers and contingencies) and Stage 4 (remediation) of the clean up strategy of the EPA-approved CUP for managing contamination associated with historical shooting activities are no longer required for implementation.

6. Closure

If you have any comments or questions about this letter, please do not hesitate to contact the undersigned.

Yours sincerely,

Kristi Hanson
Environmental Auditor
(appointed pursuant to the Environment Protection Act 2017)

Enclosure: Attachment A: Risk Assessment Report – Glenlyon Recreation Reserve, revision 1, version 3.0 dated 27 April 2022

Attachment A: Risk Assessment Report – Glenlyon Recreation Reserve, revision 1, version 3.0 dated 27 April 2022

Risk Assessment Report – Glenlyon Recreation Reserve

Suttons Lane, Glenlyon, Victoria 3461

20220348.001A

27 April 2022

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Risk Assessment Report – Glenlyon Recreation Reserve

Suttons Lane, Glenlyon, Victoria 3461

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Jasper Wisman	Jeremy McDonnell	Kevin Bourke

TABLE OF CONTENTS

TABLES (IN TEXT)

FIGURES (IN TEXT)

FIGURES

TABLES

APPENDICES

1 INTRODUCTION

Kleinfelder Australia Pty Ltd (Kleinfelder) was engaged by Hepburn Shire Council (Council) to prepare a risk assessment report for the Glenlyon Recreation Reserve, Suttons Lane Glenlyon, Victoria (hereafter referred to as the Site).

This risk assessment is a response to the amended clean up notice (CUN) – Notice ID 90011425, issued to the Council on 24 May 2021 by the Environment Protection Authority (EPA) Victoria and follows the clean-up plan (CUP) previously prepared by Kleinfelder[1]. This report includes the findings of additional soil and surface water data collected for the Site to assess the potential risk to the environment and human health in relation to the Site's historical use for clay target shooting.

[1] Kleinfelder 2021, Clean-Up Plan – Glenlyon Recreation Reserve

2 OBJECTIVE

The objectives of the risk assessment were to:

- Assess the potential risks to ecosystems and human health of recreational users associated with the Site's historical use for clay target shooting.
- Evaluate the potential impacts to human health associated with polycyclic aromatic hydrocarbon (PAH) compounds identified in shallow soils and to refine the site-specific target level (SSTL) based on the ongoing recreational use of the Site.

2.1 RISK ASSESSMENT APPROACH

The risk assessment methodology was conducted in accordance with the Australian National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013, referred to hereafter as the NEPM. The specific provisions within the NEPM are:

- Guideline on Investigation Levels for Soil and Groundwater, Schedule B1
- Guideline on Site-Specific Health Risk Assessment Methodology, Schedule B4
- Guideline on Derivation Health-Based Investigation Levels, Schedule B7
- Additional international resources have been used as appropriate, which include the following:
    - Interstate Technology Regulatory Council, 2005. Environmental management at operating outdoor small arms firing ranges.
    - Lobb, A., 2006. Potential for PAH contamination from clay target debris at shooting sites: Review of literature on occurrence of site contamination from clay targets. Report U06/81.
    - Baer, K.N. et al., 1995. Toxicity evaluation of trap and skeet shooting targets to aquatic test species. Ecotoxicology, 4, 385-392.
    - Gonzalez, G.R., 2003. Contaminants at a shooting range: Toxicological and nutritional significance to birds and mammals. Masters Thesis, Virginia Polytechnic Institute and State University.
    - Forsberg, N.D., et al., 2021. Oral and dermal bioavailability studies of polycyclic aromatic hydrocarbons from soils containing weathered fragments of clay shooting targets. Environmental Science and Technology, 55, 6897-6906.

The methodology adopted to develop the SSTL is detailed further in **Section 7** below. Data used in this risk assessment is taken from the previous environmental investigations completed at the Site between 2019 and July 2021, complemented with further soil and surface water data collected by Kleinfelder in December 2021.

3 BACKGROUND

3.1 SITE DESCRIPTION

Site details are summarised in **Table 3.1** below.

Table 3.1: Site Details

Item	Details
Site Address	Suttons Lane, Glenlyon VIC 3461
Standard Parcel Identifier	5~48\PP5324
Site Use	Local recreation reserve
Site Area	21 hectares (approximately)
Site Zoning	Public Park and Recreation (PPRZ)
Local Council	Hepburn Shire
Site Features	An oval shaped racecourse circling an area of approximately 8.1 hectares encompassing a sports oval (the Des Leonard Oval), surrounded by a sports pavilion, toilet block, storage shed, barbeque and children's playground areas, camping and horse-riding/equestrian facilities.

3.2 SITE USES/USERS

3.2.1 Site Uses

The following Site uses include:

- Clay target shooting:
  - Commenced on-site circa 1979 and was generally held on the first Saturday of each month
  - Council requested that the Daylesford Field and Game Association Inc halt this activity in 2020 due to potential human health risks resulting from clay target fragments (PAH compounds and residual lead shot)
- Equestrian (including dressage, racing/training circuit, cross country and horse trial events) – held within the main fenced area of the oval/racecourse area
- Recreational park, including:
  - Sporting events (e.g. cricket)
  - Dog walking
  - General exercise
  - Horse training
  - Push bikes
  - BBQ and children's playground areas to the south of the oval/racecourse area
  - Camping
  - Public toilet facilities
- Open space for public events held intermittently throughout the year

3.2.2 Site Users

Based on the information provided by Council, it is understood that the Site users include:

- Clay target shooters:
  - Based on the information provided, it is proposed that this activity will recommence again once per month on a scheduled day (Sunday)
  - Public access is restricted during shooting events, with spectators observing from the boundary fences surrounding the oval/racecourse area
- Horse riders:
  - Public access is restricted during events, with spectators observing from the boundary fences surrounding the oval/racecourse area
- General recreational users of all ages (including campers, dog walkers, exercise enthusiasts, people who play sport, bike riders)

Further information regarding the expected exposure frequencies of Site users is included in **Section 7.3.3** below.

3.3 Surrounding Land Use

The surrounding land use is summarised in **Table 3.2** below.

Table 3.2: Surrounding Land Use

Direction	Description
North	Agricultural land
East	Agricultural land
South	Agricultural land, public conservation areas, residential properties, Loddon River and the Glenlyon Community Dam
West	Public conservation areas, residential properties, Loddon River and Glenlyon township

3.4 Topography and Hydrology

Glenlyon is located in the Victorian West Central Highlands where the local elevation ranges from approximately 540 mAHD[2] at the Site to 685 mAHD, approximately 1.7 km to the Site's east. Glenlyon is situated at an elevation of approximately 575 mAHD, indicating that the Site is at a topographical low point.

The Loddon River, which forms the Site's southwestern boundary is the predominant surface water feature in the area. There are multiple unnamed tributaries flowing into the Loddon River in the regional area, including a creek that traverses the Site's southern boundary.

The northern boundary of the Site slopes down towards the middle (i.e. the drainage area), by approximately 20 m, and the surface elevation increases between the drainage area and the southern boundary of the Site by approximately 5 m toward the Loddon River.

The racecourse interior is grassed with a sparse tree cover, whereas the exterior areas are grassed with denser tree cover. Surface water overland flow within the racecourse area is controlled by an earthen spoon drain network that channels the water into a shallow water retention pond, located near the western boundary on the racecourse interior, from which overflowing water is discharged to the Loddon River through an earthen spoon drain.

[2] mAHD – metres relative to the Australian Height Datum

3.5 GEOLOGY

The geological and hydrogeological review identified that the Site is located in a reasonably complex area with extensive basalt and partially mineralised siltstone located to the north and west, and east and south, respectively. The Site itself occupies an area of recent alluvium/colluvium accumulation on the eastern bank of the Loddon River.

The regional surface geology[3] (refer to **Figure 3.1** below) is dominated by the folded and faulted Early to Middle Ordovician[4] Castlemaine Formation made up of thickly bedded marine sandstones, mudstones and shales, with rarer conglomerates to the Site's south and east. Overlying the Castlemaine Formation are Late Miocene to Holocene[5] Newer Volcanic Group basalts to the west and north, of which there are five known basalt eruption points within 2.7 km of the Site. The fluvial Eocene to Pliocene[6] Calivil Formation clays, silts, sands and conglomerates underlie the basalts and as these sediments are not known at high elevations it is probable that they were deposited by the ancient Loddon River, prior to basalt filling the river valley.

The Site surface geology is mapped as Pleistocene to Holocene[7] unconsolidated terrace/alluvial gravels, sands and silts, which based on the geological map overlie the Castlemaine Formation. These sediments are likely to comprise alluvium, derived from the Loddon River and colluvium derived from the higher elevation Castlemaine Formation and Newer Volcanic Group rocks surrounding the Site. It is considered likely that the alluvial sediments were deposited when the Loddon River was temporarily dammed on multiple occasions by basalt. The Daylesford-Glenlyon Lead beneath the basalt marks the approximate palaeo-Loddon River channel.

Deep leads formed when basalt flows filled river valleys, hence the leads are essentially palaeo-alluvial deposits, some of which contain gold. Primary gold mineralisation is associated with regional hydrothermal alteration of the Ordovician sediments that resulted in quartz veining with minor sulfide (pyrite, arsenopyrite, chalcopyrite, sphalerite and galena) and iron carbonate[8] precipitation. While Glenlyon is not within a historical gold producing area, the Ordovician rocks up-topographic gradient from the Site are described "*micaceous sandstones intersected by quartz veins*"[9], hence the rocks have been hydrothermally altered and associated sulfides are to be expected.

[3] From gsv.vic.gov.au/sd_weave
[4] Early to middle Ordovician marine sediments deposited between 485 and 460 million years before present.
[5] Late Miocene to Holocene basalts were erupted between 8.5 million and 5,000 years before present.
[6] Eocene to Pliocene fluvial sediments deposited between approximately 50 and 5 million years before present.
[7] Pleistocene to Holocene terrace sediments deposited between 2.5 million years and the present.
[8] Phillips, G.N., et al. 2003. Gold. In Birch, W.D. (editor) Geology of Victoria. Pp. 377-433.
[9] Geological Survey of Victoria., undated. Quarter Sheet 10 NW. 40 chains to 1 inch, geological map. Department of Mines, Victoria.

Bore logs[10] for wells within Glenlyon suggest the basalt is up to 60 metres thick (WRK009922) and thins toward the margins, to less than 20 metres thick. Bore 65296, to the Site's west, across the Loddon River intersected 12 m of basalt, cemented wash (a general term for cemented gravel sediment derived from nearby hills) to 22 metres below ground level (mbgl) and sandstone to 24 mbgl. Located near the Site's western boundary the 260 m deep Jet Bore log (Bore 65272, the Site mineral water well) indicates that clay and sandstone are present to 20 metres depth beneath which are sandstones and shales with quartz intervals, supporting the earlier observation that hydrothermal alteration is prevalent in the area.

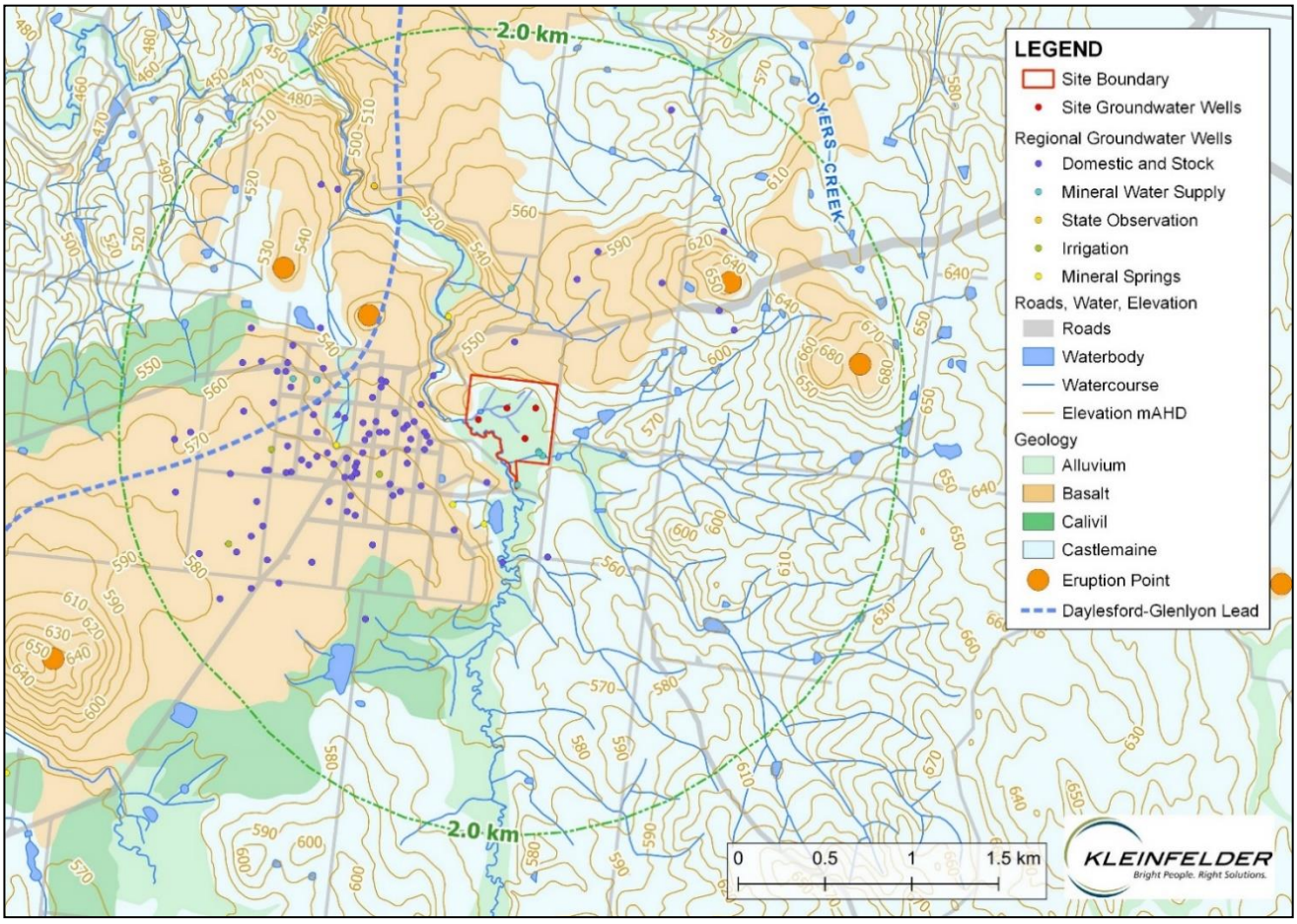

Figure 3.1: Map showing the Site location, regional geology (1:50,000 GSV interpretation), regional groundwater monitoring wells, elevation and surface water features

3.6 Previous Soil / Surface Water Sampling

A preliminary soil contamination assessment (PSCA), which included a desktop review, site inspection and soil contamination assessment was previously undertaken by Beveridge Williams[11]. The PSCA concluded that the Site contained lead and PAH impacts from the recreational shooting activities that may pose a potential health risk to Site users. The PSCA recommended limiting access to the Site to prevent health and environmental impacts from the identified contamination and further detailed soil and groundwater assessment for ongoing operation and management of the Site.

The EPA issued a CUN (90010886) for the Site on 31 January 2020, which required the Council to address imminent risks to human health and environment from the clay target shooting activity at the Site and undertake a detailed site investigation (DSI) to identify the level and extent of contamination in soil and groundwater on and from the Site. Kleinfelder[12] was engaged to undertake a DSI to satisfy the requirements of the CUN 90010886.

[10] Available from bom.gov.au
[11] Beveridge Williams, 2019. Preliminary Soil Contamination Assessment, Glenlyon Reserve, Suttons Lane, Glenlyon
[12] Kleinfelder, 2020. Detailed Site Investigation, Glenlyon Recreation Reserve, Suttons Lane, Glenlyon, Victoria

Details of the previous investigations undertaken at the Site in relation to soil, groundwater and surface water are included in the following sections.

3.6.1 Soil

Kleinfelder completed a DSI for the Site that included advancing 55 soil bores in an unbiased grid formation in the target shooting shot and clay-bitumen target fall zones. Beveridge and Williams (2019) had previously collected 30 surface soil samples targeting the six target launch areas and centrally where elevated lead concentrations were previously identified during X-ray fluorescence (XRF) preliminary screening. The previous sample locations are shown on **Figure 1** (attached).

The screening criteria applicable as per the NEPM has been adopted to assess the Site for the ongoing land use scenario as a recreation reserve includes the following:

- Ecological investigation/screening level (EIL/ESL) for a public open space.
- Health investigation/screening levels HIL/HSL C for public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths.

Of the 85 surface samples analysed from within the racecourse/oval grid, the following exceedances of the Tier 1 HIL C were reported:

- Lead – two surface samples collected by Beveridge and Williams (SS28 and SS29)
- Benzo(a)pyrene toxicity equivalent quotient (BaP TEQ) for the following samples:
  - Eight surface samples collected by Beveridge and Williams, including:
    - SS01
    - SS03
    - SS04
    - SS11
    - SS13
    - SS15
    - SS17
    - SS27
    - SS28
    - SS29
  - Two surface samples collected by Kleinfelder (OG26_0.1 and OG42_0.1)
- Total PAH - one surface sample collected by Beveridge and Williams (SS15)

Based on the proportion of Beveridge Williams samples exceeding HIL C being greater than the Kleinfelder collected samples, it was considered that target fragments are likely to have been included within the Beveridge Williams samples especially as the sample locations targeted the target launch areas.

In order to verify these elevated results reported by Beveridge Williams dataset, Kleinfelder completed further soil sampling at select locations across the Site. Further details of the additional soil sampling completed is included in **Section 4.1** below.

Samples underlying the surface samples, which reported the highest concentrations of lead and PAH compounds were analysed and included the following: OG11_0.5, OG13_0.7, OG14_0.5, OG15_0.7, OG16_0.4, OG20_0.4, OG24_0.5, OG25_1.0, OG26_0.4, OG36_0.6, OG42_0.4, OG49_0.5 and OG53_0.5. The concentrations of lead reported for these samples ranged from 11 – 50 mg/kg, with concentrations of PAH compounds all less than the laboratory limit of reporting (LOR). Based on the concentrations reported in the samples analysed from below the surface samples (i.e. those samples analysed that were collected from depths of 0.4, 0.5, 0.7 and 1.0 mbgl), no evidence of lead and BaP migration through the soil profile was observed.

Kleinfelder also completed soil sampling and analysis in other areas of the Site, which included the barbecue area (samples BS01 to BS11), children's playground (samples PG01 to PG05), camping area (samples CG01 to CG12), mounting yard area (samples MY01 to MY05), pavilion (samples PV01 to PV10), eastern and south-eastern fence lines (samples FB01 to FB05) and neighbouring properties to the north, east and west of the Site (SB01 to SB14). The concentrations of PAH and lead were all below the adopted human health and ecological criteria, which demonstrates that the contamination associated with shooting activities at the Site is confined to the oval/racecourse area, with no exceedances reported in other areas of the Site where soil sampling was completed.

Refer to **Figures 2** and **3** attached showing the sample locations where the concentrations exceeded HIL C. The results from the previous soil assessments completed at the Site are provided in **Tables 1** to **8** (attached).

A statistical evaluation of the lead. BaP TEQ, total PAH and BaP surface data was completed to assess whether the results met the criteria outlined in Schedule B1 of the NEPM. The soil samples collected as part of the wider investigation across other areas of the Site were not included in this statistical analysis.

Following statistical evaluation of the dataset it was determined that:

- The concentrations of lead in soil do not exceed the Tier 1 NEPM HIL C or EIL
- The concentration of BaP TEQ in seven soil samples exceed 250% of the Tier 1 NEPM HIL C
- The concentration of PAH in one soil sample exceed 250% of the Tier 1 NEPM HIL C

3.6.2 Groundwater

Four groundwater monitoring wells were installed into alluvium/colluvium adjacent to (MW01) and within (MW02 to MW04) the racecourse area (refer to **Figure 5** attached showing the well locations. During the first groundwater monitoring event (GME) completed at the Site in April 2020, dissolved lead was reported below the laboratory LOR in all samples; however concentrations of dissolved metals (including copper, nickel and zinc) exceeded the water dependent ecosystems and species (WDES) screening criteria[13]. Dissolved nickel concentrations were also reported above the drinking water screening criteria[14]. Very low concentrations of PAH compounds (fluorene and phenanthrene) were reported at or slightly above the laboratory LOR, however these compounds are not known to be carcinogenic and therefore do not exceed the screening criteria.

In a sample collected from the Site's mineral water well, all dissolved metals (associated with the anthropogenic Site use and metals identified in groundwater) were below the laboratory LOR and hence below the screening criteria. This result is consistent with the mineral water source being significantly below the surficial alluvial aquifer.

A second GME was completed on 27 July 2021 for the four groundwater monitoring wells previously installed at the Site (MW01, MW02, MW03 and MW04). Reported dissolved metals concentrations were generally consistent with the April 2020 GME. Copper, nickel and zinc concentrations exceeded the adopted criteria applicable to WDES in all groundwater samples analysed and drinking water screening criteria in MW03. Nickel concentrations reported in groundwater from MW02 and MW04 in April 2020 exceeded both the adopted water dependent ecosystems and species (95% freshwater) screening criteria and drinking water screening criteria.

A concentration of dissolved lead was reported at MW04 slightly above the laboratory LOR but was less than the applicable criteria. The dissolved lead concentration at MW04 indicates that there is the potential for leaching to have occurred from the overlying surface soils, however, this appears to be limited and has not resulted in groundwater concentrations being reported above the relevant objectives for applicable environmental values. It is considered that the higher lead concentration is likely associated with the higher water table, which was observed during the second GME, where the groundwater is likely to have come into contact with shallower soils comprising higher lead concentrations.

[13] Australian and New Zealand Environment and Conservation Council and the Agriculture and Resource Management Council of Australia and New Zealand, 2000. Australian and New Zealand guidelines for fresh and marine water quality.
[14] National Health and Medical Research Council, 2011. Australian drinking water guidelines 6. Version 3.5. Updated August 2018.

All PAH compounds were reported below the laboratory LOR. Nutrients, cations/anions, TDS and TSS concentrations were reported below the adopted screening criteria (where relevant) in all groundwater samples, consistent with the April 2020 GME results.

Kleinfelder previously completed a desktop hydrogeological review and develop a hydrogeological conceptual site model (HCSM) for the Site to further understand the relationship between the Site and regional aquifers, with particular reference to the elevated dissolved copper, nickel and zinc concentrations within the Site groundwater[15]. Based on the findings of the desktop hydrogeological review and HCSM, Kleinfelder concluded that the elevated concentrations of dissolved metals (including copper, nickel and zinc) reported in groundwater were considered to be background and not associated with historical clay target shooting activities at the Site.

3.6.3 Surface Water

Two watercourses are present in the southern area of the Site, including the Loddon River running along the southwestern boundary, and an unnamed tributary running through the camping area near the southern reserve boundary. The reserve interior also contains an internal surface water drainage, which includes a holding basin (soak) located near the western boundary, which discharges to the Loddon River. The soak was dry at the time of the Kleinfelder DSI.

The DSI investigation strategy relied on a contamination model where clay target shooting produced large hot-spot areas where COPC may be elevated. Low-lying Site areas within the oval/racecourse were not specifically targeted during this investigation, however, sample locations OG46_0.1 and OG47_0.1 were located in proximity to the drainage areas within the racecourse area. One soil sample was also collected from the margin of the soak located at the western boundary (OG27_0.1) where water accumulates prior to discharge to the Loddon River. The concentrations of lead and PAH were all below the laboratory LOR and or applicable criteria at these soil sample locations, supporting the observation that transport within on-Site surface water is unlikely.

In addition, Auditor verification samples were collected targeting a drainage line leading into the soak (sample AV01) and the soak located at the western boundary, which was dry at the time (sample AV02). The concentrations of metals (including lead) and PAH compounds were reported below the laboratory LOR or applicable screening criteria.

The following surface water samples were collected from Loddon River to assess whether metals and PAH impacts associated with surface water runoff were present:

- SW01 collected from Loddon River at the discharge point of the soak located near the western boundary. The sample was considered to be representative of surface waters (and any associated potential contaminants in the soil) discharging from the Site, however, it was noted that no surface water was entering Loddon River at the time of the collection.
- SW02 collected from Loddon River at the at the discharge point of the unnamed tributary running through the camping area near the southern reserve boundary. The sample was considered to be representative of surface waters (and any associated potential contaminants in the soil) discharging from the Site, however, it was noted that no surface water was entering Loddon River at the time of the collection.

Refer to **Figure 4** attached showing the above sample locations.

The concentrations of contaminants were reported below the laboratory LOR or applicable screening criteria, indicating that contaminant surface water transport off-Site is unlikely to be occurring. The results from the previous surface water sampling are provided in **Tables 14** to **16** (attached).

Based on the findings of the surface water sampling completed at the Site, no evidence for migration within surface water was found based on the concentrations of lead reported in the soil samples collected from the drainage lines and soak within the oval/racecourse area and the surface water samples collected from the two discharge points to Loddon River. It was acknowledged, however, that limited water was observed to be discharging at the time of sampling and another round of surface water sampling was recommended to be conducted during a rainfall event to confirm the contamination status of the water discharging to Loddon River.

[15] Kleinfelder 2021, Clean-Up Plan – Glenlyon Recreation Reserve

Further details of a second surface water sampling event and assessment of the potential risk to relevant receptors is included in **Section 4.2** below.

3.6.4 Existing Risk Mitigation Strategies

The existing risk management controls previously implement by Council for the Site include:

- Temporary fencing installed over areas of concern associated with contamination previously reported
- Signage updated and installed on temporary fencing and permanent fencing at the entry points to the reserve
- Continued implementation of changed grass mowing so that dust generation is reduced
- Assistance to user groups developing event management plans to ensure contaminated soil is identified as risk and control measures are included and implemented
- Monitoring of temporary precautionary measures and during events to ensure controls remain functional and are implemented properly

4 FUTHER SOIL AND SURFACE WATER INVESTIGATION

4.1 SOIL

4.1.1 Objective

The objective of collecting additional soil samples was to assess whether similar concentrations to those reported during the Beveridge Williams PSCA can be repeated and whether similar concentrations are widespread at those previous sample locations.

The findings of the additional soil investigation were used to refine the conceptual site model (CSM) for the Site and the risk posed by elevated PAH compounds in soil to users of the Site.

4.1.2 Scope of Work and Methodology

The scope of the soil sampling included the following:

- Advancement of a total of 18 targeted boreholes (i.e. six boreholes per previous location) in a circle approximately 1 m from the following three previous Beveridge Williams soil sample locations where the highest concentrations of PAH compounds were previously reported:
  - SS15
  - SS27
  - SS29
- Collection of 36 primary soil samples using a hand auger to a depth of up to 0.5 metres below ground level (mbgl)
- Collection of clay target fragments (sample labelled S1) and a representative soil sample (sample labelled SW03) at the holding basin (soak) located near the western boundary and submitted for analysis to assess whether the elevated PAHs in soil are associated with clay target fragments
- Submission of collected samples under chain of custody (COC) documentation to a laboratory that has National Association of Testing Authorities (NATA) accreditation for the required analysis.
- Evaluation of analyte concentrations in comparison to the adopted benzo(a)pyrene toxic equivalence quotient (BaP TEQ) SSTL developed for the Site.

Beveridge Williams soil sample locations SS27 and SS29 previously targeted the debris drop zone. Sample location SS15 (which correlated with the highest concentration of BaP TEQ) was collected from one of the six firing areas (described by Beveridge Williams as Area 4).

It is noted that no co-ordinates of the previous Beveridge Williams soil sample locations were provided. These locations were therefore estimated from the supplied figures using geo-information software. The coordinates of the previous Beveridge Williams locations and the additional Kleinfelder targeted sample locations (using Universal Transverse Mercator (UTM), zone 55) are shown below.

- SS15: 256571.3894; 5868861.9946
  - SS15_1: 256571.3894, 5868862.9946
  - SS15_2: 256572.2554, 5868862.4946
  - SS15_3: 256572.2554, 5868861.4946
  - SS15_4: 256571.3894, 5868860.9946
  - SS15_5: 256570.5234, 5868861.4946
  - SS15_6: 256570.5234, 5868862.4946

- Sample location SS27: 256356.9454; 5868727.6323.
  - SS27_1: 256356.9454, 5868728.6323
  - SS27_2: 256357.8115, 5868728.1323
  - SS27_3: 256357.8115, 5868727.1323
  - SS27_4: 256356.9454, 5868726.6323
  - SS27_5: 256356.0794, 5868727.1323
  - SS27_6: 256356.0794, 5868728.1323
- Sample location SS29: 256414.7297; 5868880.2388.
  - SS29_1: 256414.7297, 5868881.2388
  - SS29_2: 256415.5957, 5868880.7388
  - SS29_3: 256415.5957, 5868879.7388
  - SS29_4: 256414.7297, 5868879.2388
  - SS29_5: 256413.8637, 5868879.7388
  - SS29_6: 256413.8637, 5868880.7388
- Sample location SW03/S1: 256224.6803, 5868811.8752

The sample locations are shown in **Figure 6** (attached).

A description of the sampling program including the number of samples and analytical suite is outlined in **Table 4.1** below.

Table 4.1: Soil –Scope of Works

Item	Details

Soil Sampling	• Kleinfelder has performed the soil sampling program using the following methodology:
	• Samples were collected using a decontaminated hand auger and placed directly into appropriate laboratory-supplied sample containers.
	• Samples were collected from the following depths:
	  ▪ Near surface – 0.0-0.1 mbgl
	  ▪ Underlying natural soil (0.3-0.4 mbgl)
	• An additional clay target fragment (sample ID S1) and underlying soil sample was collected at sample location SW03.
	• Soil samples were collected by an environmental scientist/engineer and soil descriptions were recorded.
	• The soil samples were collected by advancing the 75 mm hand auger to the desired depth (i.e. 0.1 and 0.3-0.4 mbgl), the auger was then withdrawn and the remaining soil added to the sample jar.
	• The following samples were collected for quality assurance (QA)/quality control (QC):
	  ▪ 1 x blind duplicate
	  ▪ 1 x split triplicate
	  ▪ 1 x rinsate sample taken from re-usable equipment
	• Samples were chilled in containers for delivery to the analytical laboratories under COC.
	• All re-usable equipment was decontaminated between samples using Decon 90, and fresh nitrile gloves were used for every sample.

Item	Details
Laboratory Analysis	• A total of 19 primary soil samples, collected from the near surface of each sample location have been analysed for PAH compounds. • The collected clay target fragment (S1) was crushed and analysed for PAH compounds. • A total of two QA/QC samples were analysed for PAH compounds.

4.1.3 Adopted Soil Criteria

The 2017 Victorian Environment Protection Act (the Act) identifies environmental values that are sought to be achieved or maintained for ambient air, ambient sound, land and water environments. Environmental values are provided in the environmental reference standard[16] (ERS) that applies to each segment of the environment and specifies indicators and objectives to assess whether the environmental values are achieved, maintained or threatened.

The relevant ERS and environmental values based on the Site being zoned as PPRZ include:

- Land dependent ecosystems and species (modified and highly modified ecosystems)
- Human health
- Buildings and structures
- Aesthetics

Soil screening criteria specific for PAH compounds have been established in Schedule B1 of the NEPM. The concentrations of contaminants associated with the Site's historical use for clay target shooting previously reported in the soil were not considered to represent a risk to the above environmental values, with the exception of human health. This was due to the concentrations of BaP TEQ previously reported in the soil. As outlined in the Kleinfelder CUP, however, a SSTL for BaP TEQ was developed using published literature and the specific use of the Site.

Further detail of the SSTL for BaP TEQ that was adopted as part of this risk assessment for the protection of human health is discussed further in **Section 7** below.

4.1.4 Results

The soil profile encountered was generally consistent with the observations made during the previous Kleinfelder DSI and included:

- The borehole locations were all covered with grass.
- A fill layer of brown clayey silt to a depth of up to 0.4 mbgl.
- Natural grown/grey silty clay was observed underlying this fill layer.
- The soil sample collected at SW03 consisted of the same fill material as encountered in the boreholes.

The borehole logs for the sample locations are provided in **Appendix A**.

Clay target fragments were observed to be present at the surface at the soak (sample location SW03). No clay target fragments were observed at each of the targeted sample locations (SS15_1 to SS15_6, SS27_1 to SS27_6 and SS29_1 to SS29_6). No staining, foreign material or potential asbestos containing material (ACM) was observed in the inspected soil material.

In summary, the analytical result for the soil samples were as follows:

- The concentrations of BaP TEQ reported at each of the sample locations targeting the previous Beveridge Williams locations ranged from less than the laboratory LOR to 26 mg/kg.

[16] Victorian Government, 2021. Environment reference standard. Victoria Government Gazette No S 245

- The concentrations exceeded the NEPM HIL C at seven sample locations but were less than the concentrations previously reported.
- The concentration of BaP TEQ reported for the clay target sample was 140 mg/kg.
- All PAH concentrations reported for soil sample SW03_0.0-0.1, collected at the same location as the clay target sample were below the laboratory LOR.

No samples collected from the underlying natural soil were analysed for PAH. Based on the concentrations reported in the samples previously analysed from the natural soil, however, no evidence of PAH migration through the soil profile was observed.

Soil laboratory results are summarised **Table 4D** (attached). The sample locations are provided on the attached **Figure 6**. Copies of the laboratory certificates of analysis are contained in **Appendix B**.

4.1.5 Discussion

The findings of the additional soil sampling confirmed that the elevated concentrations of PAH compounds (including BaP TEQ) are present in the soil at the Site and are associated with the binding material used in clay targets for recreational shooting. The spatial distribution of contaminants, where the highest concentrations were reported in those sample locations targeting the debris drop zone and firing areas, is consistent with that typically observed at a site used for shooting activities, as reported in the Beveridge Williams PSCA report. Although no visible clay target fragments were observed in the soil at the locations that targeted those locations where the highest concentrations of PAH compounds were previously reported, the results are considered to be due to the clay target fragments present in the soil.

The significantly elevated PAH concentrations are therefore considered to reflect soil samples with entrained clay target fragments and not representative of contamination which has leached from these materials and adsorbed to soil particles. This is further evidenced by the concentration of PAH reported in the soil sample collected at the soak (sample SW03) where a clay target fragment (high in PAH) was observed to be relatively intact. This fragment was likely deposited at this location as a result of surface water flow rather than being associated with the launch/fall of targets and the underlying soil would therefore have been subject to a significant amount of inundation/ potential leaching.

Based on the findings of the additional soil sampling, although isolated to the target drop/launch zone areas, the soil is impacted by carcinogenic PAH compounds and is considered to be associated with historical clay target shooting activities at the Site. As noted previously, based on the findings of a literature review, the bioavailability of carcinogenic PAH compounds in clay targets was considered to be significantly lower and unlikely to represent a risk to human health. This is further discussed further in **Section 7** below.

4.2 SURFACE WATER

4.2.1 Objective

As outlined in the Kleinfelder CUP, it was concluded that there was a need to perform further surface water sampling on-Site to confirm that the concentrations of contaminants of concern (including PAH and dissolved metals) are below the applicable screening criteria following a period of higher rainfall.

4.2.2 Scope of Work and Methodology

The scope of work included the following:

- Collection of surface water samples at representative locations on-Site and off-Site.
- Submission of collected samples under COC documentation to a laboratory NATA accredited for the required analysis.
- Evaluation of analyte concentrations in accordance with adopted screening criteria appropriate for the Site.
- Comparison of analyte concentrations to previous data collected.

A description of the sampling program including the number of sampling locations and analytical suite is outlined in **Table 4.2** below.

Table 4.2: Surface Water –Scope of Works

Item	Details

Surface Water Sampling	• Kleinfelder collected surface water samples from the following locations:
	  ▪ Samples at location SW1 were collected from an accessible location at the bank of the Loddon River approximately 2 m upstream and 2 m downstream from the entry point, respectively (SW1_1 and SW1_2). It was noted that no water was flowing from the Site to this discharge point during sampling and no sample could be collected in the drain to the Loddon River, immediately before discharge as this was dry at the time of sampling.
	  ▪ Sample location SW2 at the Loddon River, downstream of the southern discharge point, and upstream of this discharge point from the unnamed tributary (SW4).
	  ▪ Sample location SW3 at the soak.
	  ▪ Sample location SW5 at the Loddon River upstream of the Site, which was collected as a background sample.
	• Surface water samples were collected by an environmental scientist/engineer, using a telescopic water sampler for the samples from the river and tributary. The sample from the soak was collected directly into the laboratory supplied bottles while wearing fresh nitrile gloves.
	• The water samples were collected at an approximate depth of 0.3 to 0.4 m below the water surface at the Loddon River and unnamed tributary, which had a depth of approximately 0.5 m. The water samples from the soak were collected from just below the water surface, as the depth of the soak was less than 0.1 m.
	• Field water quality parameters (including redox potential, pH, dissolved oxygen, electric conductivity, colour, odour and turbidity) were recorded at each sample location.
	• Samples for metal analysis were filtered in the field prior to sampling (using 0.45 µm filters).
	• The following samples were collected for quality assurance (QA)/quality control (QC):
	  ▪ 1 x blind duplicate.
	  ▪ 1 x split triplicate (this sample was unintendedly analysed at both the primary and secondary laboratory).
	  ▪ 1 x rinsate sample taken from re-usable equipment.
	• Samples were chilled in laboratory supplied containers for delivery to the analytical laboratories under COC.
	• All re-usable equipment was decontaminated between samples using Decon 90.

Laboratory Analysis	• Six primary surface water samples were analysed for:
	  ▪ Dissolved metals (including arsenic, cadmium, chromium, copper, lead, nickel and zinc).
	  ▪ PAH.
	  ▪ Nutrients, cations/anions, total dissolved solids (TDS) and total suspended solids (TSS).
	• The two water QA/QC samples were analysed for dissolved metals and PAH.

A plan showing the surface water sample locations is included in **Figure 4** (attached).

4.2.3 Adopted Surface Water Criteria

The Central Foothills and Coastal Plains Segment has been adopted and the applicable environmental values are:

- Water dependent ecosystems and species
- Agriculture and irrigation
- Human consumption of aquatic foods
- Industrial and commercial
- Water-based recreation

- Traditional owner cultural values
- Cultural and spiritual values

The criteria applicable to each of the above environmental values are included in **Tables 14** to **16** (attached).

4.2.4 Surface Water Results

Water laboratory results are summarised in **Tables 14** to 1**6** (attached). Field logs are included in **Appendix A** and copies of the laboratory certificates of analysis are contained in **Appendix B.**

In summary, the analytical results for the stormwater samples were as following:

- PAH and dissolved metals were all reported below the laboratory limit of reporting (LOR).
- The nutrients, cations, anions, TDS and TSS concentrations were all below the adopted site criteria.
- All dissolved metals concentrations were below the adopted site criteria, with the exception of the copper concentration (0.005 mg/L) in sample SW03, exceeding the water dependent ecosystems and species – 95% freshwater criteria (0.0014 mg/L).

4.2.5 Discussion

- Based on the findings of the second surface water sampling event completed at the Site, it is considered that the elevated concentrations of contaminants present in the soil and associated with clay target shooting do not represent a potential risk to surface water receptors.
- It is noted that concentrations of dissolved metals reported at the soak (SW03) were higher than the laboratory LOR and the concentration of copper exceeded relevant criteria. At the time of sampling, however, the water level at the soak was low, with the depth of water being less than 100 mm. The water was stagnant with no water flowing between the drainage lines and the nearest receptor (Loddon River). The concentrations of dissolved metals are therefore likely to be more concentrated due to less water being present as a result of evaporation. The concentrations are considered to be higher than they would be during times of higher rainfall, where the volume of water would be higher.

5 QUALITY ASSURANCE/QUALITY CONTROL

5.1 LABORATORY QA/QC PROGRAM

5.1.1 Quality Control Samples

As part of the laboratory internal QA/QC, the laboratories conduct regular audits on their analyses through the use of reagent blanks, analysis of surrogate spikes, repeat duplicates and verification of recoveries.

Kleinfelder completed a review of the laboratory QA/QC sample data collected during the project in accordance with Australian Standard, *Guide to the investigation and sampling of sites with potentially contaminated soil* (AS 4482.1).

A review of the primary and secondary laboratories internal laboratory QA/QC program presented as part of their final NATA reports indicated the QA/QC duplicate outliers presented in **Table 5.1** below.

Table 5.1: QA/QC duplicates

Item	Details
Laboratory frequency of quality control samples	The number of internal quality control soil samples at the secondary laboratory (ALS) for Laboratory Reports EM2200148 and EM2200200 were insufficient for PAH/Phenols (SIM) for the matrix spikes. The number of internal quality control water samples at the secondary laboratory (ALS) for was insufficient for PAH/Phenols (GC/MS – SIM), for both the laboratory duplicates as the matrix spikes.
Laboratory method duplicates	All internal laboratory duplicate and method spikes reported RPDs within the acceptable range.
Laboratory method blanks	All internal laboratory method blanks recoveries were within the acceptable range.
Laboratory method spikes	All internal laboratory method spike recoveries were within the acceptable range.

Overall, a sufficient frequency of laboratory duplicates, laboratory control samples, matrix spikes and surrogate spikes were reported to assess the accuracy of the laboratory methods and potential bias due to matrix effects and extraction efficiency. A sufficient frequency of laboratory method blanks was reported to assess for potential laboratory cross-contamination from sampling equipment or analysis equipment. Therefore, the outliers listed above are not considered to affect the interpretation of the reported data and the results are considered to be representative of soil and surface-water at the time of sampling.

5.1.2 Holding Time Compliance

Analysis holding time breaches for PAH compounds and moisture content were reported for all soil samples for the primary laboratory in Laboratory Report EM2200148. The holding time for PAH (14 days) is for volatile compounds and these are not the contaminant of concern in clay targets. The holding time for semi-volatile PAH compounds is 28 days and the initial analysis was completed within this time period. It is noted that a repeat analysis was requested due to the variability in concentrations of PAH compounds reported between the primary and secondary laboratories and the holding time for the repeat analysis slightly exceeded the holding time of 28 days. Shooting activities were halted at the Site in 2020 and therefore the clay targets have been present on the surface of the Site for a significant period of time. The minor breach in the holding time was therefore not considered to impact upon the overall interpretation of results.

Holding times for PAH were also exceeded for the secondary laboratory in Laboratory Report EM2200148 for surface water sample QC02. This was due to the delay in the transport of the sample from the primary laboratory. Again semi-volatile compounds have a holding time of 28 days and analysis was completed within this time period.

All other analytes for the soil and surface water samples were received at the laboratory, extracted and analysed within their respective holding times.

5.1.3 Laboratory Limits of Reporting

Laboratory limits of reporting (LOR) for soil and surface water samples were sufficiently low to enable comparison of contaminant concentrations with adopted screening, with the exception of total PAH in surface water.

The PAH compounds were reported at concentrations below the laboratory LOR in all surface water samples analysed. The LOR adopted for the second monitoring event was greater than the criteria applicable to the environmental values for stock watering for BaP, and drinking water and recreational water for total PAH.

The environmental values are unlikely to be realised both on-Site and off-Site and results are not considered to impact upon the overall interpretation of the findings. Furthermore, the concentrations of PAH compounds were reported below the ultra-trace LOR applied during the first sampling event, which were below the criteria.

5.2 FIELD QA/QC PROGRAM

5.2.1 Relative Percentage Difference

Kleinfelder adopts a relative percent difference (RPD) acceptance criterion of up to 50% in accordance with the AS 4482.1. The RPD was calculated for duplicate and triplicate field samples as shown.

$$RPD = \frac{(Co - Cs)}{\left(\frac{Co + Cs}{2}\right)} x100$$

where: Co = concentration of the primary sample

Cs = concentration of the duplicate sample

RPDs are presented in **Tables 9** to **12** for soil and **Tables 17** to **20** for surface water (attached).

Where RPDs where incalculable due to one or more QC samples reporting contaminant concentrations less than laboratory LOR, the LOR value has been adopted to allow RPD calculation. Where RPDs exceeded the 50% acceptance criterion for QC samples, the highest concentration was adopted for interpretative use.

The duplicate and triplicate samples of this assessment met the acceptance criteria, with the exception of various PAH compounds in soil, which were reported consistently higher in the primary sample than in the duplicate and triplicate sample.

- This consistent difference between the primary sample, compared to both the duplicate and triplicate sample, is associated with the inherent heterogeneity of the clay target fragments entrained within the soil and/or low analyte concentrations reported.

5.2.2 Rinsate and Trip Blanks

Rinsate blanks were collected from field sampling equipment during the soil sampling and surface water sampling works in order to assess the effectiveness of decontamination procedures. All analytes were reported below the laboratory LOR in the rinsate blanks, indicating that that the decontamination procedures used were appropriate and that cross-contamination between locations by reusable sampling equipment is unlikely to have occurred.

No trip blanks were collected or analysed during the soil and surface water sampling as volatile organic compounds (VOC) were not considered to be contaminants of concern and cross-contamination during transport and storage of the compounds analysed was not considered likely.

Quality control rinsate results are presented in **Tables 13A** and **20** (attached).

5.3 QA/QC Conclusions

Based on the above QA/QC review, Kleinfelder considers data quality to be acceptable for interpretive use.

Copies of the final NATA endorsed laboratory reports, including internal QA/QC results and CoC documentation for both laboratories are attached as **Appendix B.**

6 CONCEPTUAL SITE MODEL

A conceptual site model (CSM) is a qualitative analytical tool that identifies the sources of contamination, exposure pathways and potential receptors on-Site and in the site surroundings. A CSM also provides a discussion of the nature and extent of impacts and relevant source-pathway-receptor (S-P-R) linkages.

The CSM previously prepared in the Kleinfelder CUP has been refined to reflect the updated risk profile at the Site based on the findings of additional soil and surface water sampling.

It is acknowledged that this CSM relates only to contamination caused by shooting activities and not by other potential sources of historical contamination at the Site. Based on the historical review, however, particularly the information that horse racing commenced at the Site since 1867, and the absence of alluvial gold mining, it is considered unlikely that contaminating activities (other than clay target shooting) were undertaken at the Site.

6.1 EVALUATION OF EXPOSURE PATHWAYS

6.1.1 Source

Based on the historical use of the Site for clay target shooting, the conclusions from the previous reports for the Site and the findings of further soil and surface water investigation at the Site, the sources of contamination were identified as:

- Lead shot:
  - Shotgun pellets are contained within shotgun wads and are made up of lead.
  - Lead shot is principally a mixture between antimony (0.5 to 6.5 wt% (for hardness)) and lead with minor arsenic (0.1 wt%) and tin (0.1 wt%) concentrations; trace elements (i.e., <1,000 mg/kg) include bismuth, copper, zinc, chromium and silver.
- Clay targets:
  - Historically made of limestone and bitumen mixture.
  - The bitumen makes up approximately 30% of the targets and may contain between 0.5 and 5% polycyclic aromatic hydrocarbon (PAH) compounds[17].

The unused targets and larger target fragments can be removed from the environment using physical methods and this was previously undertaken by the members of the Daylesford Field and Game Association Inc in accordance with the conditions of their licence for clay target shooting. Based on the findings of additional soil sampling completed by Kleinfelder in 2021, however, it is considered that the elevated concentrations of PAH compounds reported in soil are likely associated with smaller clay target fragments not visible to the eye. These fragments would be unable to be recovered by hand and therefore become entrained within the soil.

6.1.2 Spatial and Vertical Distribution – PAH in Soil

The PAH concentrations reported at the Site reveal a spatial distribution pattern. The previous Beveridge Williams PSCA identified total PAH compounds above the laboratory LOR in 21 out of the 30 samples analysed (or 70% of samples). In contrast, total PAH compounds were only reported above the laboratory LOR in 19% of the shallow soil samples reported during the Kleinfelder DSI (i.e., 10 out of 54). As shown in **Figure 6.1** below, however, the majority of Beveridge Williams samples were concentrated within the six target launch areas and the debris drop zones. There is a discernible correlation between the elevated PAH concentrations and the approximate 50 to 90 meter fall zone, where the majority of target fragments are likely to have previously been deposited. The 50 to 90 metres fall zone was estimated from near the centre of the launch areas.

[17] Environment Canterbury, 2006. Potential for contamination from clay target debris at shooting sites: Review of literature on occurrence of site contamination from clay targets. Report No. U06/81

As discussed previously, based on the concentrations reported in the samples previously analysed at depth from the underlying natural soil, no evidence of PAH migration through the soil profile was observed.

Based on the distribution observed and the sampling methodology employed, both during the initial investigation and recent soil sampling completed by Kleinfelder, it can be concluded that the PAH distribution is likely consistent with the conceptual model PAH fall zone as demonstrated in **Figure 6.1** below.

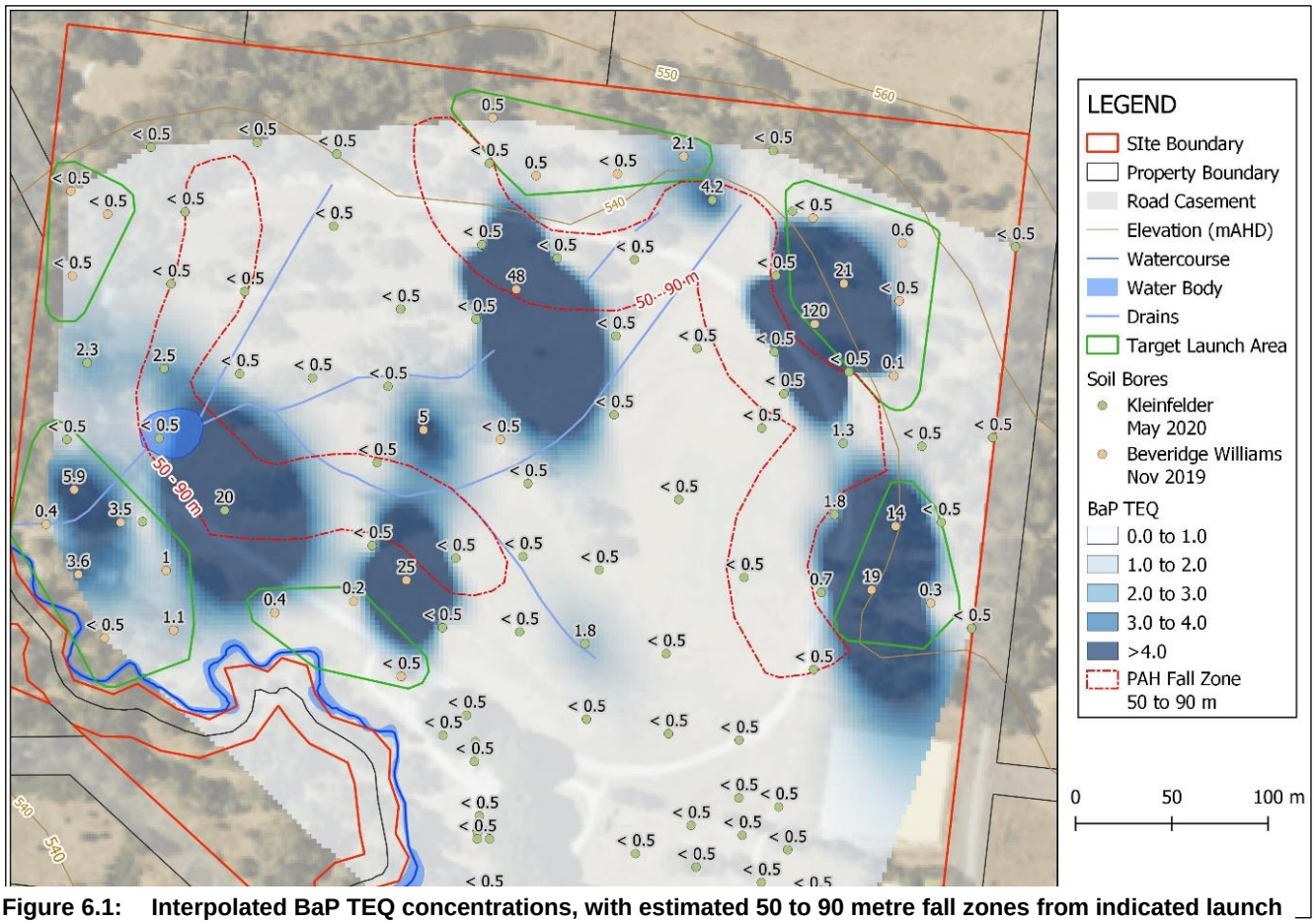

Figure 6.1: Interpolated BaP TEQ concentrations, with estimated 50 to 90 metre fall zones from indicated launch areas.

6.2 PATHWAY

The potential primary exposure pathways for the migration of the identified contaminants of concern are:

- Dermal contact.
- Dust inhalation.
- Direct and incidental ingestion.
- Discharge of contaminated groundwater/stormwater.

6.3 RECEPTORS

Based on an ongoing recreational and public open space use of the Site, the potential receptors include:

- On-Site and Off-Site recreational users (e.g. equestrian, shooting, dog walkers, camping activities, children's playground)
- On-Site visitors (e.g., spectators)
- Off-Site residential users
- On-Site and Off-Site groundwater extraction for drinking water purposes

- On-Site and Off-Site ecosystems (terrestrial and freshwater)

The S-P-R linkages associated with the identified contaminants of concern are outlined in **Table 6.1** below.

Table 6.1: Clay Target Shooting S-P-R Linkages

Source	Pathway	Receptor	Risk to Receptor	Comments
Lead shot	Dermal contact Dust inhalation Direct and incidental ingestion	On-Site and Off-Site recreational users (current and future) Off-Site residential receptors	Acceptable	The concentrations of lead in soil do not exceed the Tier 1 human health investigation levels (NEPM HIL C) following statistical evaluation of the dataset. No exceedances of lead were reported in other areas on-Site and off-Site where soil sampling was completed.
	Plant uptake within the root zone (applicable to 2 mbgl)	On-Site terrestrial ecosystem		The concentrations of lead in soil do not exceed the applicable ecological investigation levels (NEPM EIL).
	Migration in groundwater.	On-Site and off-Site extractive groundwater users On-Site and off-Site terrestrial and freshwater ecosystems		Limited leaching of lead in soil to the groundwater was observed, which has not resulted in groundwater concentrations being reported above the adopted screening criteria.
	Discharge to and migration in surface water	On-Site and off-Site receptors (as listed in **Section 6.3** above)		No evidence for migration within surface water was found based on the following: • The concentrations of lead were reported below the laboratory LOR or adopted criteria in the surface samples collected from the soak within the oval/racecourse area, from the two discharge points to Loddon River and upstream of the discharge point at the unnamed tributary. • The concentrations of lead reported in the samples collected from the drainage lines and soak within the oval/racecourse area and the sediment/surface water samples collected from the two discharge points to Loddon River were below the adopted criteria.
Used clay targets (PAH, BaP TEQ)	Dermal contact Dust inhalation Direct and incidental ingestion	On-Site recreational Site users (current and future)	Potentially acceptable (subject to further risk assessment)	Although concentrations of BaP TEQ in soil exceed 250% of the HIL C, NEPM assumes 100% bioavailability. Based on the findings of the literature review, however, the bioavailability of carcinogenic PAH compounds in clay targets is significantly lower and a SSTL for BaP TEQ could be developed to assess whether the PAH compounds in clay targets on-Site pose a risk to human health. This is discussed further in **Section 7** below.
		Off-Site recreational users (current and future) Off-Site residential receptors	Acceptable	No exceedances of PAH compounds were reported in other areas on-Site and off-Site where soil sampling was completed.
	Plant uptake within the root zone (applicable to 2 mbgl)	On-Site terrestrial ecosystem		The concentrations of BaP and TRH (>C16-C34) in soil do not exceed the NEPM EIL/SL following statistical evaluation of the dataset. No evidence of potential impact (i.e. stressed vegetation) was observed during investigation works on-Site.
	Migration in groundwater.	On-Site and off-Site extractive groundwater users On-Site and off-Site terrestrial and freshwater ecosystems		PAH associated with clay targets is typically non-leachable (as evidenced by the concentrations of PAH compounds in in groundwater generally being less than the laboratory LOR). Concentrations of PAH in groundwater were less than the adopted screening criteria.
	Discharge to and migration in surface water	On-Site and off-Site receptors (as listed in Section 6.3 above)		No evidence for migration within surface water was found based on the following: • The concentrations of PAH compounds were reported below the laboratory LOR or adopted criteria in the surface samples collected from the soak within the oval/racecourse area, from the two discharge points to Loddon River and upstream of the discharge point at the unnamed tributary. • The concentrations of PAH compounds reported in the samples collected from the drainage lines and soak within the oval/racecourse area and the sediment/surface water samples collected from the two discharge points to Loddon River were below the adopted criteria.

7 EXPOSURE RISK ASSESSMENT

7.1 BACKGROUND

Based on the identified S-P-R linkages developed for the Site as outlined in **Section 6** above, Kleinfelder has completed further evaluation of the potential exposure of receptors to carcinogenic PAH compounds at the Site.

Further refinement of the exposure risk assessment has been undertaken to further establish the nature and extent of risks posed by PAH contamination and whether the following is required for the Site:

- Further analysis and risk assessment
- Remediation of the soils
- Continuation of existing management controls and/or further management requirements

7.2 LITERATURE REVIEW

Bioaccessibility is generally defined as the ability of a chemical to come into contact with the absorbing surfaces in an organism. The chemical can only be absorbed when it is in a liquid or gaseous form. It is expressed as the percentage of the amount available for absorption compared to the total in a solid form.

Bioavailability is defined as the percentage of a chemical that is absorbed into the body following dermal contact, or exposures via ingestion or inhalation.

When developing Tier 1 screening levels, the NEPM assumes 100% bioavailability and also states that PAH compounds do not pose significant human health risks where they are present in bitumen fragments, as the compounds are immobile and have low bioavailability[18]. It also notes that bioavailability is highly site and PAH source specific.

As such, a literature review was previously undertaken to provide a greater understanding of whether the PAH compounds pose potential risks to human health. The literature review was performed on readily available articles and reports related to clay targets at shooting ranges.

- The Interstate Technology and Regulatory Council (ITRC)[19] notes that clay targets are composed of approximately 70% limestone (calcium carbonate) and 30% binding material (pitch, bitumen or other organic materials), with PAH compounds sourced from the binding material. PAH concentrations in clay targets varies widely, however, the highest concentrations are found in targets using pitch (crude oil or coal tar processing residues) as the binder[20]. Total PAH concentrations in the clay targets vary with concentrations ranging from 1,000[21] to 100,000[22] mg/kg. Total PAH concentrations reported in surface Site soil samples range from below the laboratory LOR to 780 mg/kg, with the higher concentrations observed in areas where clay target fragments were present in the soil.

In the study conducted by Baer et al. it was found that:

- Similar PAH concentrations in new and weathered clay targets shows that the PAH are tightly bound in the targets and the targets were the PAH source in sediments near the study area.

[18] National Environment Protection (Assessment of Site Contamination) Amendment Measure, 2013. Schedule B7, Appendix A2: The derivation of HILs for PAHs and phenols.
[19] Interstate Technology Regulatory Council, 2005. Environmental management at operating outdoor small arms firing ranges.
[20] Lobb, A., 2006. Potential for PAH contamination from clay target debris at shooting sites: Review of literature on occurrence of site contamination from clay targets. Report U06/81.
[21] Baer, K.N. et al., 1995. Toxicity evaluation of trap and skeet shooting targets to aquatic test species. Ecotoxicology, 4, 385-392.
[22] Gonzalez, G.R., 2003. Contaminants at a shooting range: Toxicological and nutritional significance to birds and mammals. Masters Thesis, Virginia Polytechnic Institute and State University.

- PAH were unlikely to be bioavailable in the aquatic environment.

More recently Forsberg et al[23] assessed the PAH relative oral bioavailability and dermal absorption from ≤250 µm soil fractions collected at two former clay target shooting ranges in the United States. The sum of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and dibenz(a,h)anthracene concentrations in the soil samples ranged from 34 to 18,500 mg/kg. Forsberg et al concluded:

- The mean benzo(a)pyrene oral relative bioavailability factors ranged from 8 to 14% and the dermal absorption factors ranged from 0.6 to 1.3%.
- The mean chrysene and benzo(a)anthracene oral factors ranged from 30 to 38% and 15 to 23%, respectively.
- Compared to the benzo(a)pyrene residential soil USEPA RSL[24] the benzo(a)pyrene screening criteria (1.1 mg/kg) would be eight times higher, at the 1:105 cancer target risk factor, for soil from the clay target shooting ranges.
- The benzo(a)pyrene relative oral bioavailability could conservatively be used for the three additional carcinogenic PAH compounds not studied.
- Dermal adsorption fractions for the five PAHs ranged from 0 to 3.6% in the soil samples and from 0 to 1.1% for a pulverised clay target. Dibenz(a,h)anthracene adsorption was 0% in all samples.

The compounds investigated by Forsberg et al comprise six of the eight carcinogenic compounds used to calculate the NEPM BaP TEQ, which assumes 100% bioavailability. The PAH bioavailability from soil containing clay target fragments was found by Forsberg et al. to be lower than 100%, but not unavailable. The human health risk posed by PAH compounds in Site soil is therefore likely to be lower than that indicated by comparison to the NEPM HIL C for BaP TEQ as discussed further below.

7.3 Derivation of SSTL for BaP TEQ

Based on the findings of the literature review, the bioavailability of carcinogenic PAH compounds in clay targets was considered to be significantly lower and a SSTL for BaP TEQ could be developed to assess whether the PAH compounds in clay targets on-Site poses a risk to human health.

As outlined in the CUP, and as verified in the auditor clean up plan verification report[25], the SSTL for BaP TEQ provides a value to replace the HIL C provided in Schedule B1 of the NEPM. The NEPM HIL excel spreadsheet calculator was used to calculate BaP TEQ SSTL using modified oral/dermal factors and exposure frequencies.

Further details of how the SSTL was developed for BaP TEQ using published literature to assess the risk that this contaminant poses to human health is discussed further below.

7.3.1 Oral and Dermal Bioavailability

The oral relative bioavailability factors for benzo(a)anthracene and chrysene as resulting from Forsberg et all are higher than the one for benzo(a)pyrene. This is not considered to pose a problem as these two compounds have a toxic equivalence factor (TEF) of 0.1 and 0.01, respectively, while benzo(a)pyrene has a TEF of 1. In addition to this, Forsberg states that the benzo(a)pyrene value, when used to represent the other compounds (benzo(b+f)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3,cd)pyrene and dibenz(a,h)antrhracene), is a conservative measure.

Based on the literature review it is considered that information obtained by Forsberg et al could be used to estimate a BaP TEQ screening criteria for the Site if the PAH concentrations in ≤250 µm soil fractions are used. No data is currently available for the ≤250 µm soil fractions for the Site, however, given the nature of the PAH

[23] Forsberg, N.D., et al., 2021. Oral and dermal bioavailability studies of polycyclic aromatic hydrocarbons from soils containing weathered fragments of clay shooting targets. Environmental Science and Technology, 55, 6897-6906.
[24] United States Environment Protection Agency regional screening level
[25] Senversa(2021), Clean-Up Plan Verification and Assessment Report, Glenlyon Recreation Reserve, Sutton Lane, Glenlyon VIC

concentration, where the highest concentrations were reported in the clay target fragment collected from the Site (140 mg/kg), it is expected that the total PAH concentrations reported (i.e. the unsieved results) would be higher than the ≤250 µm µm soil fractions.

Although the clay target fragments are considered to be entrained within rather than bound to the soil, the soil type where the study was completed was noted to be silty loam, sandy loam or sandy clay loam, which is considered to be relatively consistent to the predominant soil type where the elevated concentrations of PAH were reported at the Site (i.e. clayey silt). The values applied by Forsberg et al are therefore considered appropriate to use to adjust the HIL specific for the Site.

Using the upper ranges of the BaP oral relative bioavailability (14%) and dermal absorption factor (1.3% or 0.013), calculated by Forsberg et al, the HIL increases to:

- For early-life, the HIL becomes 20 mg/kg
- For adults, the HIL becomes 50 mg/kg

The HIL calculation sheets with these adjusted values are provided in **Appendix C1.**

7.3.2 Receptors of Concern

Adjustment factors are applied to the calculation of risks associated with early-life exposures and the early-life HIL is based on children being exposed from birth. As per Schedule B4 of the NEPM, the adjustment factors include the following:

- A ten-fold adjustment for exposures during the first 2 years of life
- A three-fold adjustment for exposures from ages 2 to less than 16 years of life
- No adjustment for exposures for ages 16 years and older.

Based on the information provided by Council, the most sensitive receptor (i.e. early-life) will not be walking in those areas where the highest concentrations of BaP TEQ were reported given that at this age they are likely to be in prams or assisted by their guardians on the more stable ground available (i.e. walking tracks as noted in **Figure 7.1** below) and not in the grassed areas where the impacts were reported.

Kleinfelder previously completed soil sampling and analysis in the children's playground located to the south of the oval/racecourse area (samples PG01 to PG05) and the concentrations of PAH compounds were all below the laboratory LOR.

Kleinfelder also completed soil sampling and analysis in other areas of the Site as part of the DSI, which included a children's playground located to the south of the oval/racecourse area (samples PG01 to PG05). This area is not considered to pose a risk to children, based on the concentrations of BaP TEQ reported in the targeted soil sampling completed. In addition, other areas of the Site were assessed, which included the barbecue area (samples BS01 to BS11), camping area (samples CG01 to CG12), mounting yard area (samples MY01 to MY05), pavilion (samples PV01 to PV10), eastern and south-eastern fence lines (samples FB01 to FB05) and neighbouring properties to the north, east and west of the Site (SB01 to SB14). The concentrations of PAH compounds were all below the adopted criteria, which demonstrates that the contamination associated with shooting activities at the Site is confined to the oval/racecourse area.

As discussed in **Section 3.2** above, however, based on the Site being accessible to the general public (with the exception of shooting/equestrian events), both adults and early-life are considered to be receptors of concern given there is no restricted access to the wider oval/racecourse area where the highest concentrations of BaP TEQ were reported at the Site.

7.3.3 Exposure Frequency

The SSTL is based on an exposure frequency of 365 days/year. Although the Site is publicly accessible every day of the year (with the exception of shooting/equestrian events), an exposure frequency of 365 days/year is very conservative as it assumes that the same individual would be exposed to the same BaP TEQ concentrations every day of the year for two hours a day for their entire lifetime.

This is therefore considered to overestimate the most likely exposure frequency for the receptors of concern based on the following information provided by Council:

- It is highly unlikely that a potential receptor will access the areas where the highest concentrations of BaP TEQ were reported every day of the year for two hours a day given that walking tracks have been established and are not located in those areas where the highest concentrations were reported. Refer to **Figure 7.1** below showing the location of the established walking tracks at the Site.
- The majority of the Site (including the area where the highest concentrations of BaP TEQ compounds were reported) is covered by thick vegetation, comprising grass and trees. It is therefore considered unlikely that receptors would be exposed to those same concentrations reported in the surface soil, which was accessed following the removal of organic material (including the surface grass and underlying rootlets) from the surface soil.
- Equestrian events are limited to once a week at the Site. In addition, the equestrian riders do not frequently ride in those areas of the Site where the highest concentrations of BaP TEQ were reported. Where the riders do use the areas where the highest concentrations of BaP TEQ were reported, this is limited to once per month.
- As previously noted in **Section 3.2.2** above, shooters use the Site once per month on a scheduled day (Sunday) and public access is restricted during shooting events, with spectators observing from the boundary fences surrounding the oval/racecourse area and not in the area where the highest concentrations of BaP TEQ were reported.
- Public events that may be held are normally held annually or at a frequency less than 2-days a week.

As such, a more likely exposure frequency has been reduced to two times per week (i.e. 104 days/year), which is considered to be protective of the receptors at the Site.

The site-specific HILs are therefore further increased to:

- 60 mg/kg for early-life
- 200 mg/kg for adults

The HIL calculation sheets with these adjusted values are provided in **Appendix C2.**

Based on this adopted SSTLs for early-life and adult for both exposure frequencies (i.e. 365 days/year and 104 days/year), the exceedances reported both during the initial investigations and recent soil sampling completed by Kleinfelder are shown in **Figure 7.2** and **7.3** below.

Figure 7.1: Walking tracks at the Site (yellow are the walking trails; red is the fence line)

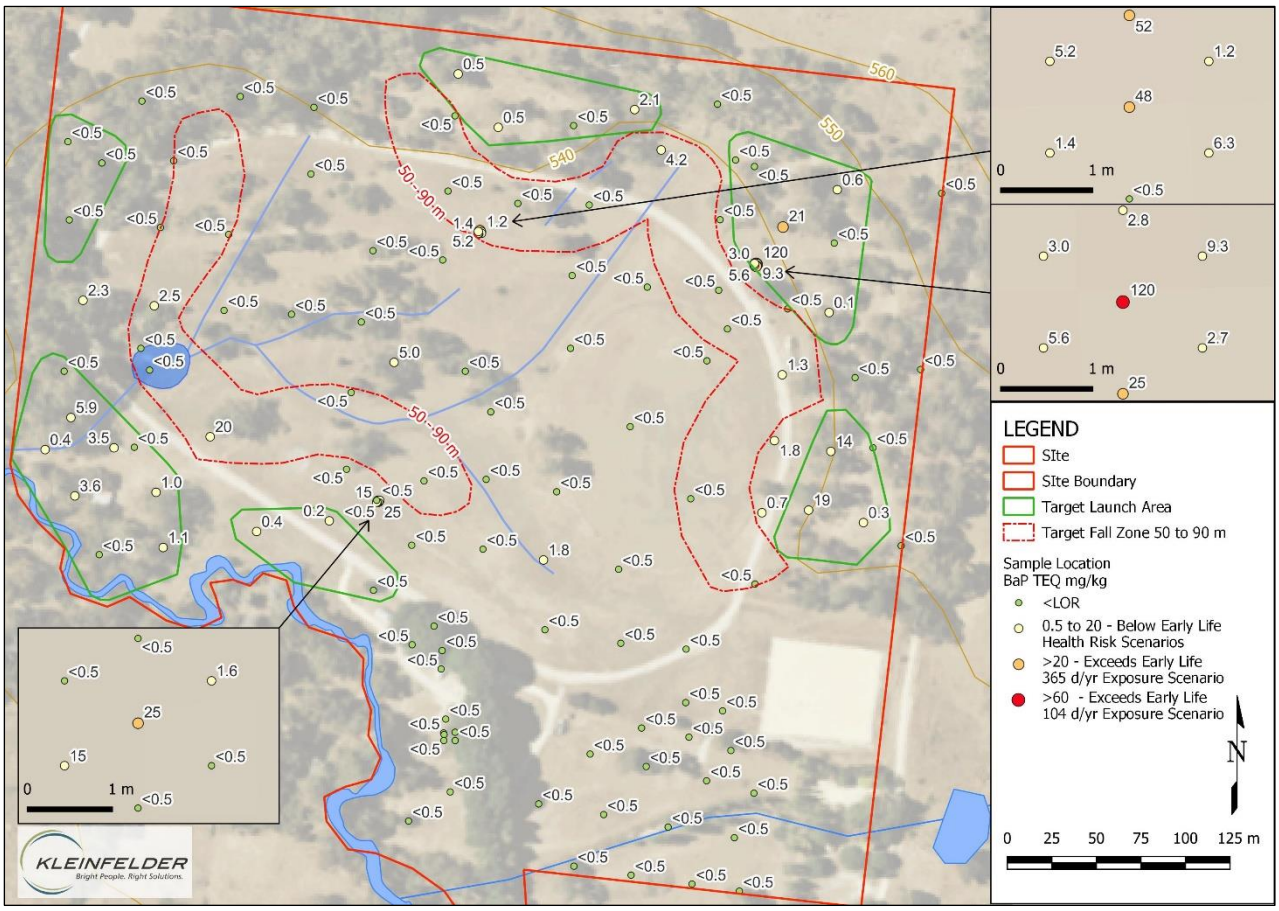

Figure 7.2: Site specific SSTLs for BaP TEQ (early-life)

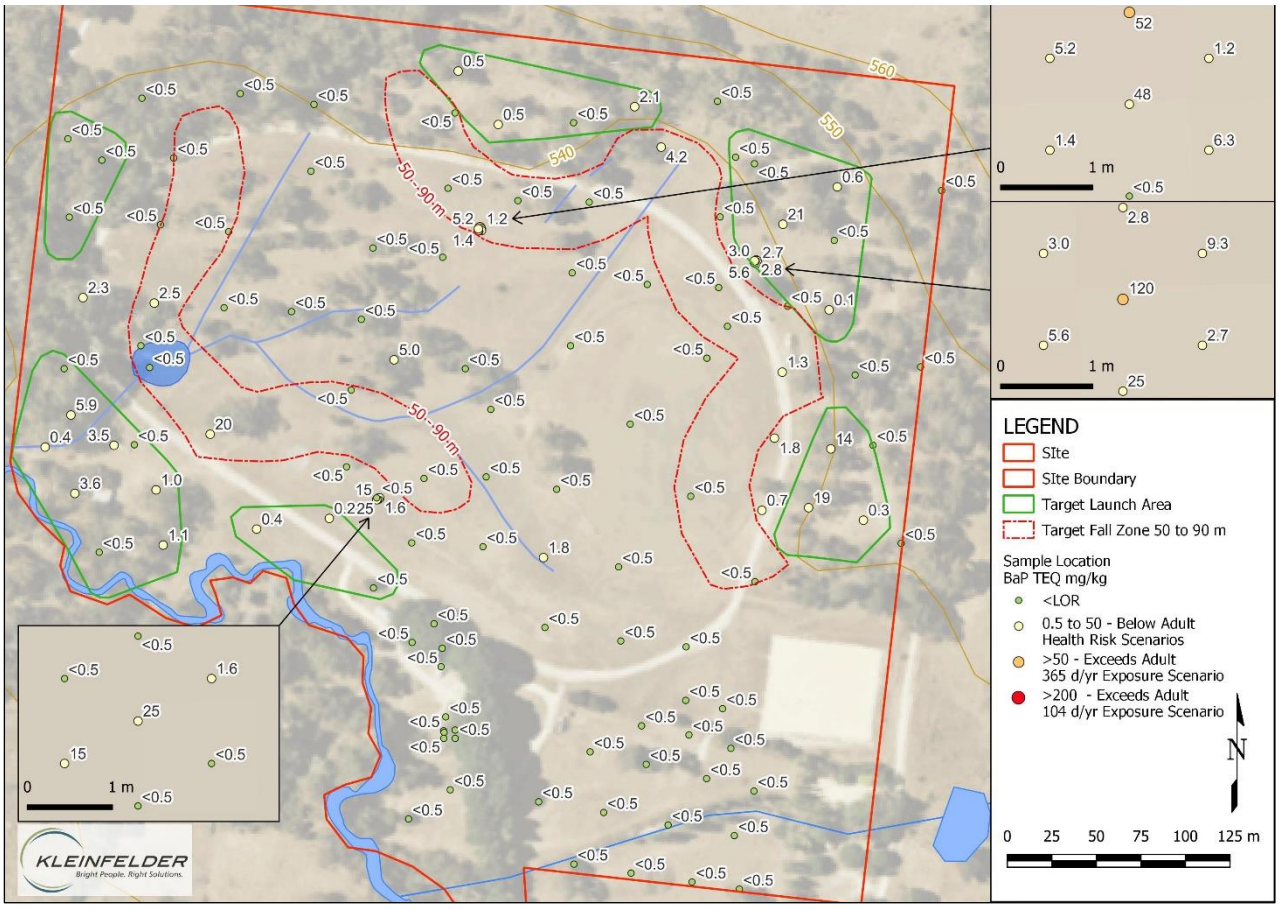

Figure 7.3: Site specific SSTLs for BaP TEQ (adult)

7.4 Statistical Evaluation of Dataset and Risk Charecterisation

The statistical evaluation for BaP TEQ surface data provided in the Kleinfelder CUP has been updated to include the most likely SSTL developed for the Site (i.e. 60 mg/kg). The data is summarised in **Table 7.1** (below). It is noted that soil samples collected during the recent targeted soil sampling completed by Kleinfelder are not included in this statistical analysis as these samples targeted the previous soil sample locations.

Table 7.1: Statistical Evaluation of the Dataset – BaP TEQ

Descriptor	BaP TEQ (mg/kg)	Samples Exceeding Criteria
SSTL	60	1
Arithmetic mean	3.726	0
95% upper confidence limit (UCL) mean	10.59	0
Standard deviation	14.44	0
250% SSTL	150	0

Based on the findings of the statistical evaluation of the dataset, the 95% UCL BaP TEQ concentration is below the most conservative modified HIL developed for the Site (i.e. 20 mg/kg). As such, in the event that individuals are accessing those areas where the highest concentrations of BaP TEQ every day of the year, the associated health risk would be low and acceptable.

Whilst the concentration of one Beveridge and Williams sample (SS15), located in the northeast portion of the Site exceeded the most likely SSTL developed for the Site (i.e. 60 mg/kg), the 95% UCL is considered to be more statistically accurate representation of average concentrations to which a receptor is potentially exposed. In addition, given that the reported concentrations of BaP TEQ in this single exceedance were similar to the concentrations of the clay target fragments analysed during the recent Kleinfelder soil sampling, it is considered that this individual sample result is strongly affected by the presence of residual clay target fragments. Kleinfelder collected an additional six samples targeting this location and the highest reported concentration of BaP TEQ (i.e. 25 mg/kg) was below the adopted SSTL. The concentration of BaP TEQ was also less than 250% of the SSTL developed for the Site (i.e. 150 mg/kg). The elevated sample location is likely to overstate the potential exposure risk (particularly over a lifetime). It is therefore considered not to be representative of the overall risk profile for the Site.

Based on the SSTL derived for the Site, statistical evaluation of the dataset and the risk profile of the soil, the concentrations of BaP TEQ are below the site-specific risk-based criteria. The human health risks posed are therefore considered to be low and acceptable and, as such, this environmental value is not precluded.

7.5 Triggers and Contingencies

In accordance the CUP previously prepared by Kleinfelder[26], further contingencies (as outlined in Stage 3 of the CUP) to further assess the risk posed by historical clay target shooting activities at the Site are not considered to be required for the Site, based on the following triggers not being met:

- A SSTL for BaP TEQ using published literature was sufficient to assess the risk that this contaminant poses to human health.
- Elevated concentrations of contaminants were not reported in the surface water.

7.6 Assumptions and Limitations

Risk assessments require a number of assumptions regarding site conditions, human exposure and the toxicity of contaminants. Although, specific parameters relating to the Site's current use were included as part of the

[26] Kleinfelder 2021, Clean-Up Plan – Glenlyon Recreation Reserve

derivation of the SSTL, it is not possible to assume that the conditions and activities at the Site will not change over time.

The assumptions considered as part of the exposure risk assessment, however, were considered to be conservative, which accounts for the uncertainty and variability used to derive the calculations for the protection of human health applicable to a public recreational reserve.

Furthermore, the nature and extent of impact has been delineated in soils within the oval/racecourse area and does not extend to other areas of the Site used by members of the public.

Overall, the assumptions considered as part of the exposure risk assessment adopt the Precautionary Principle in estimating risk[27]. The risk assessment presents conditional estimates based on a number of assumptions regarding exposure and toxicity. It is acknowledged that this is an iterative process, and the methodologies and limitations are subject to change over time. This should be recognised when considering the ongoing public recreational use of the Site.

[27] enHealth, 2012. Environmental Health Risk Assessment – – Guidelines for Assessing Human Health Risks from Environmental Hazards

8 CONCLUSION

Kleinfelder was engaged by Hepburn Shire Council to prepare this risk assessment report for the Glenlyon Recreation Reserve, located on Suttons Lane Glenlyon, Victoria.

This risk assessment is a response to the EPA Victoria amended CUN 90011425, issued to the Council on 24 May 2021 and follows the Kleinfelder CUP. This report includes the findings of additional soil and surface water data collected for the Site to assess the potential risk to the environment and human health in relation to the Site's historical use for clay target shooting.

Based on the findings of the further sampling and risk appraisal of the Site, Kleinfelder concludes the following:

- The risk posed by contaminants of concern associated with clay target shooting (i.e. lead and PAH compounds) in the Site's soil and surface water to all identified receptors is considered to be low and acceptable.
- Given the risks are considered to be low and acceptable, no further risk assessment, remedial actions or further management controls are required for the Site based on its ongoing use as a public recreational reserve.
- The management measures being taken by the Council to manage the potential short-term exposure risk to public health and the environment are no longer considered to be required. It is recommended, however, that the risk mitigation measures outlined in the Environmental Management Plan previously prepared for the Site [28] are employed as part of the recommencement of clay target shooting activities at the Site.

[28] Kleinfelder, 2021. Environmental Management Plan, Daylesford Field and Game Association Inc., Glenlyon Recreation Reserve

9 LIMITATIONS

This report has been prepared by Kleinfelder Australia Pty Ltd (Kleinfelder) and may be used only by the Client and its designated representatives or relevant statutory authorities and only for the purposes stated for this specific engagement within a reasonable time from its issuance, but in no event later than two (2) years from the date of the report.

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The findings and conclusions contained within this report are relevant to the conditions of the site and the state of legislation currently enacted in the relevant jurisdiction in which the site is located as at the date of this report.

Additionally, the findings and conclusions contained within this report are made following a review of certain information, reports, correspondence, and data noted by methods described in this report including information supplied by the client or its assigns. Kleinfelder has designed and managed the program for this report in good faith and in a manner that seeks to confirm the information provided and test its accuracy and completeness. However, Kleinfelder does not provide guarantees or assurances regarding the accuracy, completeness and validity of information and data obtained from these sources and accepts no responsibility for errors or omissions arising from relying on data or conclusions obtained from these sources.

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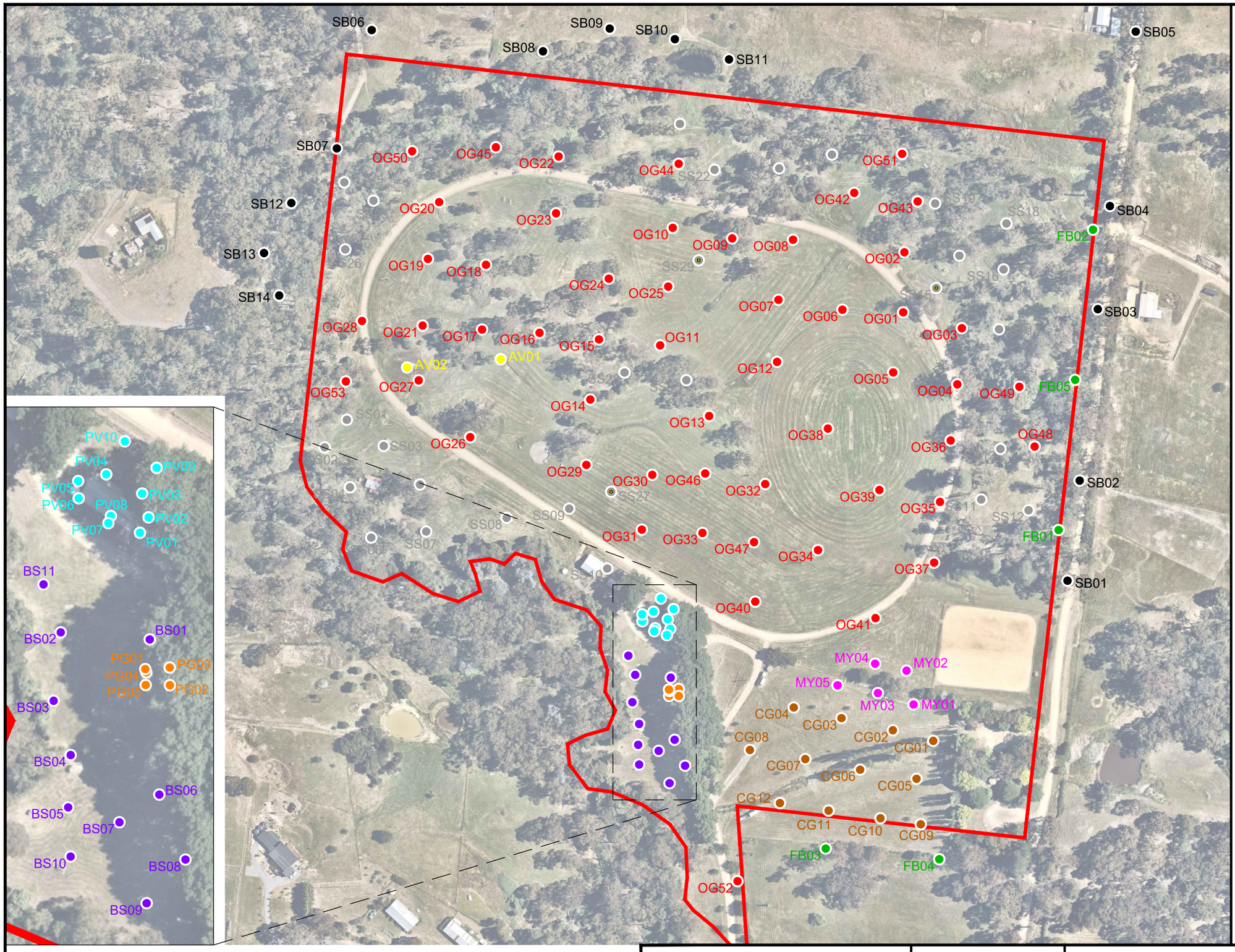
FIGURES

PLOTTED: 25-Mar-2022, 09:01AM, Iziemelis



LEGEND

- BEVERIDGE WILLIAMS, 2019
- OVAL GRID
- BBQ/SHELTER AREA
- CAMPING GROUND
- FENCE LINE
- MOUNTING YARD
- PLAYGROUND
- PAVILLION
- STORMWATER DISCHARGE
- OFFSITE
- AUDITOR VERIFICATION SAMPLE, 2021

NOTE: ALL LOCATIONS ARE APPROXIMATE.
DIMENSIONS IN METRES (m).

0 25 50 75 100 125
SCALE 1:2500 (A3) METRES

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PROJECT:	20220348.001A
DATE DRAWN:	25.03.22
DRAWN BY:	LZ
CHECKED BY:	JM
FILE NAME:	20220348.001A-4.dwg

SOIL SAMPLE LOCATIONS

GLENLYON RECREATION RESERVE
SUTTONS LANE, GLENLYON, VICTORIA

FIGURE 1

CAD FILE: O:\09_Projects\DELTEK Projects\Regular\2022\20220348.001A - Glenlyon CUP\Figures LAYOUT: 1
MELBOURNE, AU

PLOTTED: 25-Mar-2022, 09:01AM, Iziemelis

LEGEND

- BEVERIDGE WILLIAMS SAMPLE, 2019
- KLEINFELDER SAMPLE,2020
- LEAD RESULT (mg/kg)
- * DUPLICATE/TRIPLICATE RESULT
- 21 SAMPLE LOCATION - BELOW CRITERIA
- 710 SAMPLE LOCATION - ABOVE CRITERIA

NOTE: ALL LOCATIONS ARE APPROXIMATE. DIMENSIONS IN METRES (m).

N

SCALE 1:2500 (A3) METRES

0 25 50 75 100 125

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DATE DRAWN:	25.03.22
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CHECKED BY:	JM
FILE NAME:	20220348.001A-4.dwg

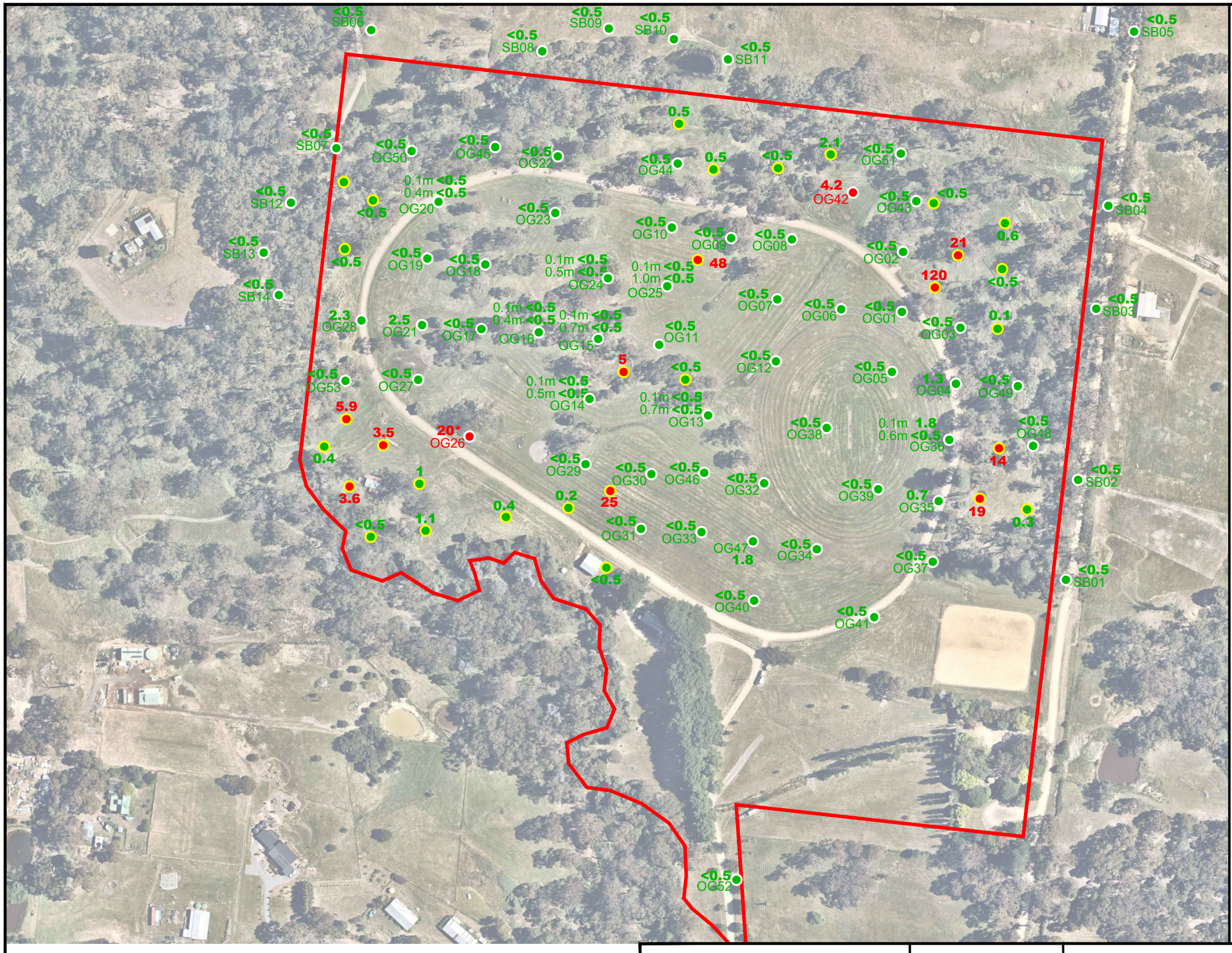
SOIL ANALYTICAL RESULTS - LEAD

GLENLYON RECREATION RESERVE
SUTTONS LANE, GLENLYON, VICTORIA

FIGURE **2**

CAD FILE: O:\09_Projects\DELTEK Projects\Regular\20221\20220348.001A - Glenlyon CUP\Figures LAYOUT: 2
MELBOURNE, AU

PLOTTED: 25-Mar-2022, 09:01AM, Iziemelis



LEGEND

- BEVERIDGE WILLIAMS SAMPLE, 2019
- KLEINFELDER SAMPLE,2020
- B(a)P TEQ RESULT (mg/kg)
- * DUPLICATE/TRIPLICATE RESULT
- 0.6 SAMPLE LOCATION - BELOW CRITERIA
- 120 SAMPLE LOCATION - ABOVE CRITERIA

N

NOTE: ALL LOCATIONS ARE APPROXIMATE.
DIMENSIONS IN METRES (m).

0 25 50 75 100 125
SCALE 1:2500 (A3) METRES

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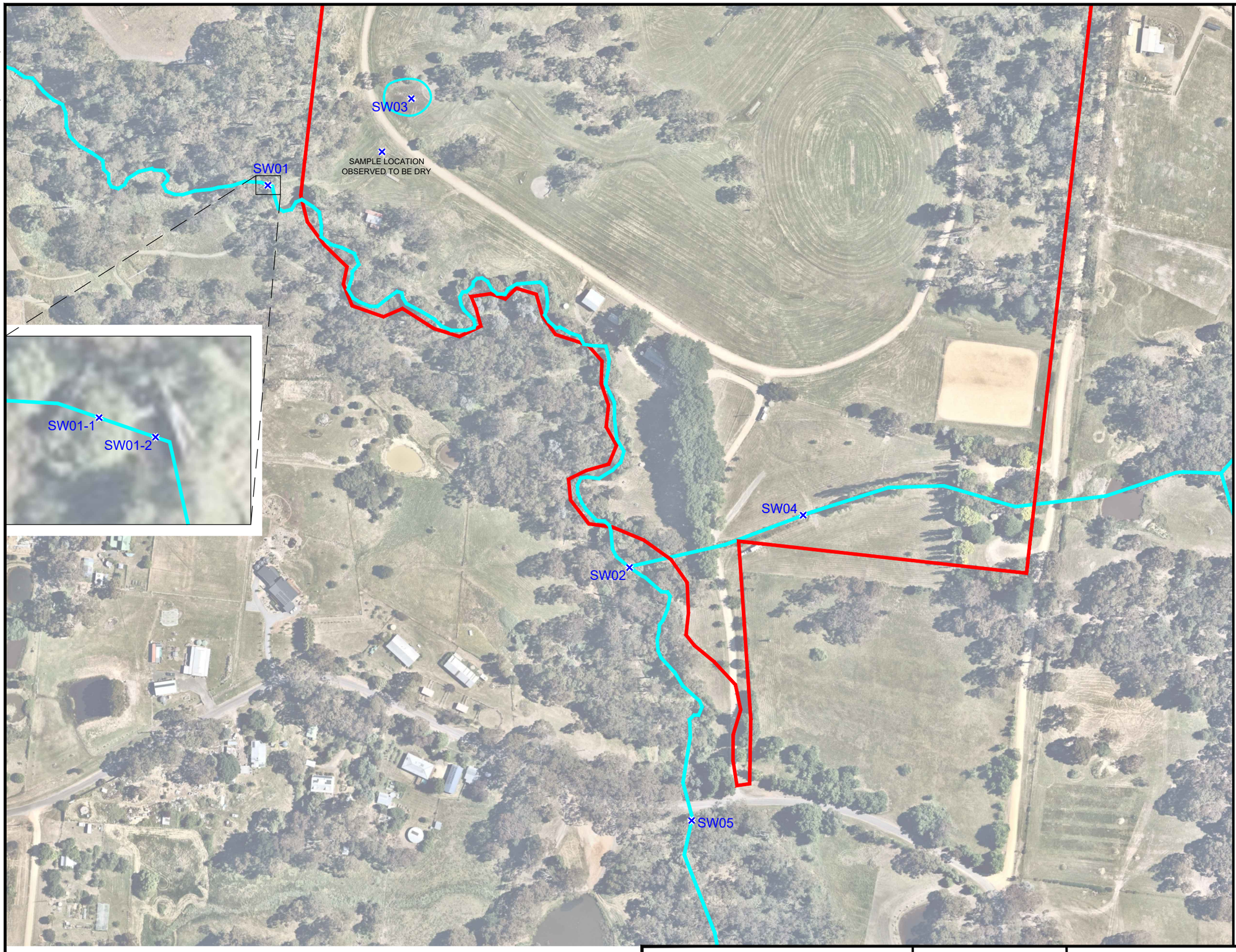
FILE NAME:	20220348.001A-4.dwg

SOIL ANALYTICAL RESULTS - B(a)P TEQ

GLENLYON RECREATION RESERVE
SUTTONS LANE, GLENLYON, VICTORIA

FIGURE
3

CAD FILE: O:\09_Projects\DELTEK Projects\Regular\20221\20220348.001A - Glenlyon CUP\Figures LAYOUT: 3
MELBOURNE, AU



LEGEND

× SAMPLE LOCATION

N

NOTE: ALL LOCATIONS ARE APPROXIMATE.
DIMENSIONS IN METRES (m).

SCALE 1:2500 (A3)

0 25 50 75 100 125 METRES

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SURFACE WATER SAMPLE LOCATION PLAN

GLENLYON RECREATION RESERVE
SUTTONS LANE, GLENLYON, VICTORIA

FIGURE
4

PLOTTED: 25-Mar-2022, 09:01AM, lziemelis

CAD FILE: O:\09_Projects\DELTEK Projects\Regular\2022\20220348.001A - Glenlyon CUP\Figures LAYOUT: 4
MELBOURNE, AU

LEGEND

MONITORING WELL

NOTE: ALL LOCATIONS ARE APPROXIMATE.
DIMENSIONS IN METRES (m).

N

0 20 40 60 80 100

SCALE 1:2000 (A3) METRES

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PROJECT:	20220348.001A
DATE DRAWN:	25.03.22
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CHECKED BY:	JM
FILE NAME:	20220348.001A-4.dwg

MONITORING WELL LOCATIONS

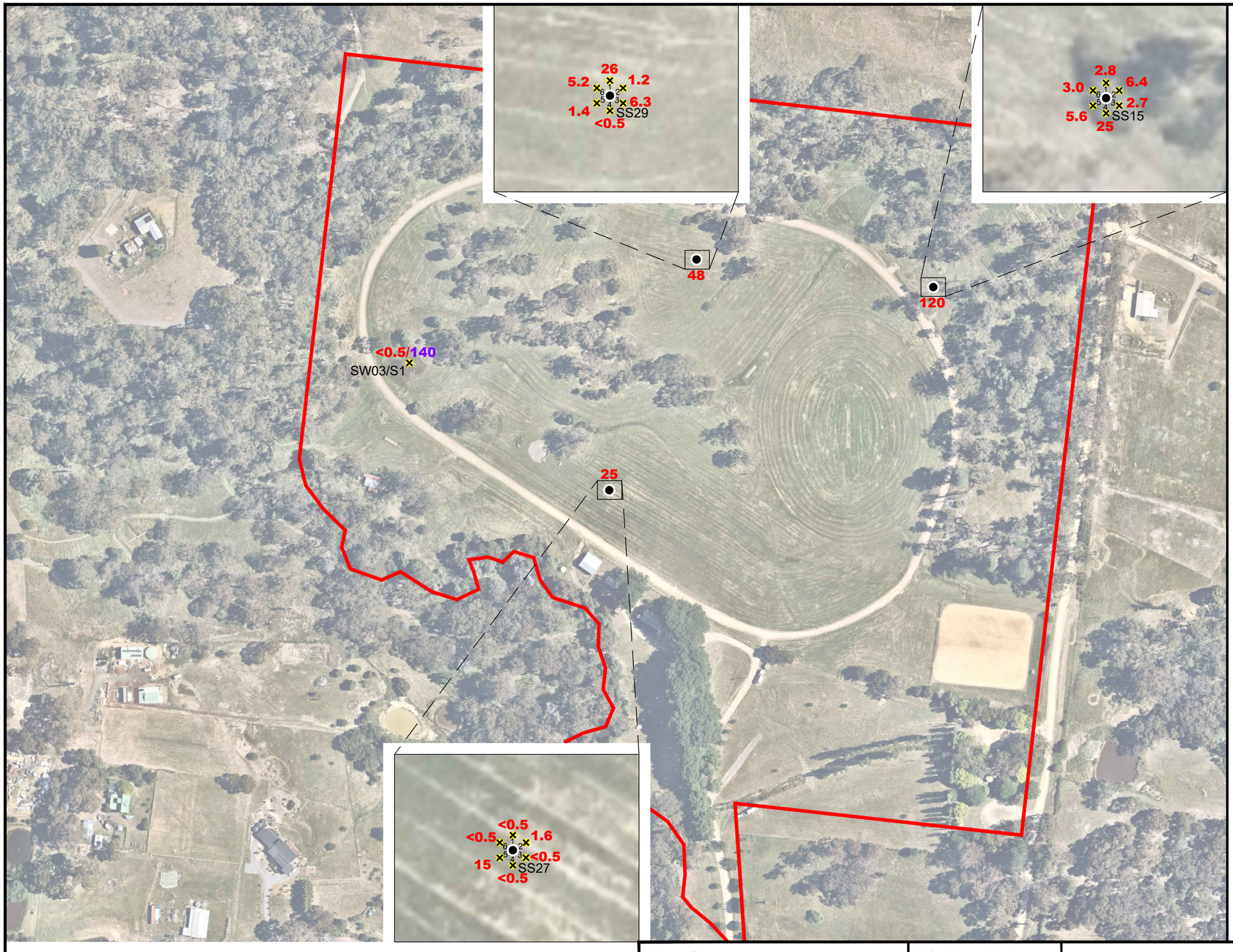
GLENLYON RECREATION RESERVE
SUTTONS LANE, GLENLYON, VICTORIA

FIGURE
5

PLOTTED: 25-Mar-2022, 09:01AM, lziemelis

CAD FILE: O:\09_Projects\DELTEK Projects\Regular\2022\20220348.001A - Glenlyon CUP\Figures LAYOUT: 5
MELBOURNE, AU

PLOTTED: 25-Mar-2022, 09:01AM, Iziemelis



LEGEND

- PREVIOUS SAMPLE LOCATION
- NEW SAMPLE LOCATION
- 25 B(a)P TEQ CONCENTRATION
- 140 B(a)P TEQ CONCENTRATION (CLAY TARGET FRAGMENT)

NOTE: ALL LOCATIONS ARE APPROXIMATE. DIMENSIONS IN METRES (m).

N

SCALE 1:2500 (A3) METRES

0 25 50 75 100 125

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PROJECT:	20220348.001A
DATE DRAWN:	25.03.22
DRAWN BY:	LZ
CHECKED BY:	JM
FILE NAME:	20220348.001A-4.dwg

SOIL B(a)P TEQ RESULTS

GLENLYON RECREATION RESERVE
SUTTONS LANE, GLENLYON, VICTORIA

FIGURE
6

CAD FILE: O:\09_Projects\DELTEK Projects\Regular\2022\20220348.001A - Glenlyon CUP\Figures LAYOUT: 6
MELBOURNE, AU

TABLES

Table 1
Soil Analytical Data - BTEXN, TRH
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			BTEXN							Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons						
			Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Naphthalene	C_6 - C_9	C_{10} - C_{14}	C_{15} - C_{28}	C_{29} - C_{36}	C_{10} - C_{36} sum	C_6 - C_{10}	C_6 - C_{10} minus BTEX (F1)	$>C_{10}$ - C_{16}	$>C_{10}$ - C_{16} minus Naphthalene (F2)	$>C_{16}$ - C_{34}	$>C_{34}$ - C_{40}	$>C_{10}$ - C_{40} (sum)
LOR			0.1	0.1	0.1	0.2	0.1	0.3	0.5	20	20	50	50	50	20	20	50	50	100	100	100
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ESL - Urban Residential/Public Open Space, Fine (NEPM 2013)			65	105	125	--	--	45	--	--	--	--	--	--	--	180	120	--	1,300	5,600	--
EIL - Urban Residential/Public Open Space (NEPM 2013)			--	--	--	--	--	--	170	--	--	--	--	--	--	--	--	--	--	--	--
Management Limits - Residential/Parkland/Public Open Space, Fine (NEPM 2013)			--	--	--	--	--	--	--	--	--	--	--	--	700	--	1,000	--	2,500	10,000	--
HSL C - Direct Contact (CRC CARE 2011)			120	18,000	5,300	--	--	15,000	1,900	--	--	--	--	--	5,100	NL	3,800	NL	5,300	7,400	--
HSL - Direct Contact Maintanence Workers (CRC CARE 2011)			1,100	280,000	85,000	--	--	230,000	29,000	--	--	--	--	--	82,000	NL	62,000	NL	85,000	120,000	--
Sample Name	Sample Date	Start Depth (m)																			
SS03	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 1.0	< 0.5	< 1.0	< 0.1	< 20	< 20	**55**	**91**	**-**	< 20	< 20	< 20	< 20	**120**	< 50	**120**
SS04	30-Oct-19	0.0	-	-	-	-	-	-	< 0.1	< 20	< 20	**65**	**76**	-	< 20	< 20	< 20	< 20	**120**	< 50	**120**
SS09	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 1.0	< 0.5	< 1.0	< 0.1	< 20	< 20	< 50	< 50	-	< 20	< 20	< 20	< 20	< 50	< 50	< 50
SS10	30-Oct-19	0.0	-	-	-	-	-	-	< 0.1	< 20	< 20	< 50	**63**	-	< 20	< 20	< 20	< 20	**56**	< 50	**56**
SS11	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 1.0	< 0.5	< 1.0	**0.2**	< 20	**27**	**340**	**380**	-	< 20	< 20	**51**	**51**	**580**	**170**	**800**
SS13	30-Oct-19	0.0	-	-	-	-	-	-	< 0.1	< 20	< 20	**150**	**150**	-	< 20	< 20	< 20	< 20	**280**	< 50	**280**
SS15	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 1.0	< 0.5	< 1.0	< 0.1	< 20	< 20	**1,500**	**800**	-	< 20	< 20	**32**	**32**	**2,200**	**160**	**2,400**
SS18	30-Oct-19	0.0	-	-	-	-	-	-	< 0.1	< 20	< 20	< 50	**86**	-	< 20	< 20	< 20	< 20	**90**	**75**	**160**
SS22	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 1.0	< 0.5	< 1.0	< 0.1	< 20	< 20	< 50	**60**	-	< 20	< 20	< 20	< 20	**63**	< 50	**63**
SS23	30-Oct-19	0.0	-	-	-	-	-	-	< 0.1	< 20	< 20	**67**	**140**	-	< 20	< 20	< 20	< 20	**150**	**74**	**220**
SS26	30-Oct-19	0.0	-	-	-	-	-	-	< 0.1	< 20	< 20	< 50	**83**	-	< 20	< 20	< 20	< 20	**87**	**67**	**150**
SS28	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 1.0	< 0.5	< 1.0	< 0.1	< 20	< 20	**120**	**130**	-	< 20	< 20	**20**	**20**	**240**	< 50	**260**
BS10_0.1	08-Apr-20	0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.3	< 0.5	< 20	< 20	< 50	< 50	< 50	< 20	< 20	< 50	< 50	< 100	< 100	< 100
FB03_0.1	08-Apr-20	0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.3	< 0.5	< 20	< 20	< 50	< 50	< 50	< 20	< 20	< 50	< 50	< 100	< 100	< 100
FB05_0.1	08-Apr-20	0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.3	< 0.5	< 20	**27**	**76**	**88**	**191**	< 20	< 20	< 50	< 50	**130**	< 100	**130**
MY01_0.1	09-Apr-20	0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.3	< 0.5	< 20	< 20	< 50	< 50	< 50	< 20	< 20	< 50	< 50	< 100	< 100	< 100
PG02_0.1	09-Apr-20	0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.3	< 0.5	< 20	< 20	< 50	< 50	< 50	< 20	< 20	< 50	< 50	< 100	< 100	< 100
PV07_0.7	08-Apr-20	0.7	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.3	< 0.5	< 20	< 20	< 50	< 50	< 50	< 20	< 20	< 50	< 50	< 100	< 100	< 100

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
NL - Not limiting
mg/kg - Milligrams per kilogram
BTEXN - Benzene, toluene, ethylbenzene, total xylenes, naphthalene
Bold indicates a detection above the laboratory limit of reporting

Criteria:
National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).
CRC CARE Technical Report No. 10 - Health Screening Level (HSL) for Petroleum Hydrocarbons in Soil and Groundwater, Part 2: Application Document (2011).

Table 2
Soil Analytical Data - Inorganics
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Anions and Cations												
			Cyanide (total)	Fluoride	Free Cyanide	Total Phosphorus	Total Nitrogen as N	Total Kjeldahl Nitrogen as N	Nitrogen	Cation Exchange Capacity	Total Organic Carbon	Electrical Conductivity @ 25°C	pH	Clay (<2 µm)
LOR			5.0	100	5.0	5.0	5.0	10	10	0.05	0.1	10	0.1	1.0
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	meq/100g	%	µS/cm	pH units	%
HIL C - Recreational (NEPM 2013)			--	--	240	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date	Start Depth (m)												
SS03	30-Oct-19	0.0	< 5.0	**230**	-	-	-	-	-	-	-	-	**5.8**	-
SS04	30-Oct-19	0.0	-	**-**	-	-	-	-	-	-	-	-	**6.4**	-
SS09	30-Oct-19	0.0	< 5.0	**150**	-	-	-	-	-	-	-	-	**6.1**	-
SS10	30-Oct-19	0.0	-	**-**	-	-	-	-	-	-	-	-	**6.1**	-
SS11	30-Oct-19	0.0	< 5.0	**190**	-	-	-	-	-	-	-	-	**5.7**	-
SS13	30-Oct-19	0.0	-	**-**	-	-	-	-	-	-	-	-	**5.9**	-
SS15	30-Oct-19	0.0	< 5.0	**190**	-	-	-	-	-	-	-	-	**6.1**	-
SS18	30-Oct-19	0.0	-	**-**	-	-	-	-	-	-	-	-	**6.0**	-
SS22	30-Oct-19	0.0	< 5.0	**140**	-	-	-	-	-	-	-	-	**6.1**	-
SS23	30-Oct-19	0.0	-	-	-	-	-	-	-	-	-	-	**5.5**	-
SS26	30-Oct-19	0.0	-	**-**	-	-	-	-	-	-	-	-	**5.7**	-
SS28	30-Oct-19	0.0	< 5.0	**110**	-	-	-	-	-	-	-	-	**5.3**	-
BS10_0.1	08-Apr-20	0.1	< 5.0	**180**	-	-	-	-	-	-	-	-	**6.7**	-
FB03_0.1	08-Apr-20	0.1	< 5.0	**250**	-	-	-	-	-	-	-	-	**7.1**	-
FB05_0.1	08-Apr-20	0.1	< 5.0	**510**	-	-	-	-	-	-	-	-	**7.0**	-
MY01_0.1	09-Apr-20	0.1	< 5.0	**290**	-	-	-	-	-	-	-	-	**7.0**	-
OG26_0.1	07-Apr-20	0.1	-	-	-	**340**	< 5.0	**2,600**	**2,600**	-	-	-	-	-
OG28_0.1	07-Apr-20	0.1	-	-	-	-	-	-	-	**10**	**2.5**	< 10	**5.8**	**18**
OG31_0.1	06-Apr-20	0.1	-	-	-	**540**	< 5.0	**4,800**	**4,800**	-	-	-	-	-
OG40_0.1	06-Apr-20	0.1	-	-	-	**600**	**11**	**5,500**	**5,511**	-	-	-	-	-
OG49_0.5	06-Apr-20	0.5	-	-	-	-	-	-	-	**4.5**	**2.4**	**21**	**4.8**	**16**
OG53_0.1	09-Apr-20	0.1	-	-	-	-	-	-	-	**7.1**	**2.5**	**940**	**4.7**	**19**
OG53_0.5	09-Apr-20	0.5	-	-	-	-	-	-	-	**2.5**	**0.4**	< 10	**5.2**	**17**
PG02_0.1	09-Apr-20	0.1	-	-	< 5.0	-	-	-	-	-	-	-	-	-
PV07_0.7	08-Apr-20	0.7	< 5.0	**330**	-	-	-	-	-	-	-	-	**7.2**	-

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
mg/kg - Milligrams per kilogram
µS/cm - Microsiemens per centimeter
Bold indicates a detection above the laboratory limit of reporting

Criteria:
National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).

Table 3
Soil Analytical Data - Metals
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Metals																					
			Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Chromium VI	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Strontium	Tin	Vanadium	Zinc
LOR			5.0	5.0	2.0	5.0	2.0	10	0.4	5.0	1.0	5.0	5.0	20	5.0	5.0	0.1	5.0	5.0	2.0	0.2	5.0	10	5.0	5.0
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL C - Recreational (NEPM 2013)			--	--	300	--	90	20,000	90	--	300	300	17,000	--	600	19,000	80	--	1,200	700	--	--	--	--	30,000
EIL - Urban Residential/Public Open Space (NEPM 2013)			--	--	100	--	--	--	--	500	--	--	120	--	1,100	--	--	--	120	--	--	--	--	--	260
Sample Name	Sample Date	Start Depth (m)																							
D01	30-Oct-19	0.0	**14,000**	< 5.0	< 5.0	**130**	< 5.0	< 10	< 0.2	**25**	-	**6.0**	**8.0**	**13,000**	**130**	**150**	< 0.05	< 5.0	**14**	< 3.0	< 5.0	**21**	< 5.0	**25**	**32**
D02	30-Oct-19	0.0	**9,800**	< 5.0	**6.0**	**79**	< 5.0	< 10	< 0.2	**88**	-	**5.0**	**5.0**	**58,000**	**36**	**92**	< 0.05	< 5.0	**11**	< 3.0	< 5.0	**10**	< 5.0	**70**	**17**
SS01	30-Oct-19	0.0	**16,000**	< 5.0	< 5.0	**160**	< 5.0	< 10	< 0.2	**31**	-	**8.0**	**12**	**18,000**	**100**	**200**	< 0.05	< 5.0	**19**	< 3.0	< 5.0	**21**	< 5.0	**22**	**41**
SS01A	30-Oct-19	0.0	-	< 10	**5.4**	**160**	< 2.0	< 10	< 0.4	**26**	-	**6.0**	**11**	-	**160**	**180**	< 0.1	< 5.0	**17**	< 2.0	< 0.2	-	< 10	**28**	**33**
SS02	30-Oct-19	0.0	**16,000**	< 5.0	< 5.0	**130**	< 5.0	< 10	< 0.2	**25**	-	**7.0**	**10**	**17,000**	**80**	**190**	< 0.05	< 5.0	**17**	< 3.0	< 5.0	**23**	< 5.0	**16**	**39**
SS03	30-Oct-19	0.0	-	< 5.0	< 5.0	**160**	< 5.0	< 10	< 0.2	**19**	< 1.0	**8.0**	**11**	-	**100**	**580**	< 0.05	< 5.0	**13**	< 3.0	< 5.0	-	< 5.0	**13**	**46**
SS04	30-Oct-19	0.0	**19,000**	< 5.0	**6.0**	**120**	< 5.0	< 10	< 0.2	**56**	-	**16**	**20**	**32,000**	**160**	**420**	< 0.05	< 5.0	**41**	< 3.0	< 5.0	**28**	< 5.0	**42**	**52**
SS05	30-Oct-19	0.0	**19,000**	< 5.0	< 5.0	**200**	< 5.0	< 10	< 0.2	**28**	-	**12**	**14**	**19,000**	**34**	**590**	< 0.05	< 5.0	**21**	< 3.0	< 5.0	**39**	< 5.0	**22**	**84**
SS06	30-Oct-19	0.0	**10,000**	< 5.0	< 5.0	**110**	< 5.0	< 10	< 0.2	**15**	-	**8.0**	**7.0**	**12,000**	**28**	**320**	< 0.05	< 5.0	**11**	< 3.0	< 5.0	**20**	< 5.0	**9.0**	**39**
SS07	30-Oct-19	0.0	**11,000**	< 5.0	< 5.0	**110**	< 5.0	< 10	< 0.2	**19**	-	**7.0**	**9.0**	**16,000**	**31**	**270**	< 0.05	< 5.0	**14**	< 3.0	< 5.0	**20**	< 5.0	**13**	**40**
SS08	30-Oct-19	0.0	**13,000**	< 5.0	< 5.0	**130**	< 5.0	< 10	< 0.2	**25**	-	**9.0**	**10**	**16,000**	**33**	**320**	< 0.05	< 5.0	**15**	< 3.0	< 5.0	**23**	< 5.0	**15**	**50**
SS09	30-Oct-19	0.0	-	< 5.0	< 5.0	**89**	< 5.0	< 10	< 0.2	**20**	< 1.0	**6.0**	**9.0**	-	**53**	**230**	< 0.05	< 5.0	**15**	< 3.0	< 5.0	-	< 5.0	**18**	**30**
SS10	30-Oct-19	0.0	**25,000**	< 5.0	< 5.0	**220**	< 5.0	< 10	< 0.2	**30**	-	**8.0**	**13**	**22,000**	**73**	**320**	**0.05**	< 5.0	**20**	< 3.0	**17**	**32**	< 5.0	**28**	**62**
SS11	30-Oct-19	0.0	-	< 5.0	**6.0**	**95**	< 5.0	< 10	< 0.2	**12**	< 1.0	< 5.0	**9.0**	-	**320**	**170**	**0.06**	< 5.0	**6.0**	< 3.0	< 5.0	-	< 5.0	**11**	**24**
SS12	30-Oct-19	0.0	**9,100**	< 5.0	< 5.0	**90**	< 5.0	< 10	< 0.2	**20**	-	< 5.0	**7.0**	**26,000**	**84**	**160**	< 0.05	< 5.0	**6.0**	< 3.0	< 5.0	**17**	< 5.0	**12**	**23**
SS13	30-Oct-19	0.0	**14,000**	< 5.0	**9.0**	**130**	< 5.0	< 10	< 0.2	**28**	-	< 5.0	**12**	**23,000**	**69**	**240**	< 0.05	< 5.0	**11**	< 3.0	< 5.0	**20**	< 5.0	**21**	**28**
SS14	30-Oct-19	0.0	**27,000**	< 5.0	< 5.0	**210**	< 5.0	< 10	< 0.2	**54**	-	**10**	**17**	**29,000**	**150**	**400**	**0.05**	< 5.0	**25**	< 3.0	< 5.0	**30**	< 5.0	**44**	**36**
SS15	30-Oct-19	0.0	-	< 5.0	< 5.0	**140**	< 5.0	< 10	< 0.2	**44**	< 1.0	**11**	**9.0**	-	**270**	**460**	< 0.05	< 5.0	**18**	< 3.0	< 5.0	-	< 5.0	**35**	**25**
SS16	30-Oct-19	0.0	**20,000**	< 5.0	< 5.0	**130**	< 5.0	< 10	< 0.2	**53**	-	**9.0**	**12**	**38,000**	**40**	**140**	< 0.05	< 5.0	**17**	< 3.0	< 5.0	**13**	< 5.0	**41**	**19**
SS17	30-Oct-19	0.0	**9,200**	< 5.0	**53**	**81**	< 5.0	< 10	< 0.2	**30**	-	**10**	**11**	**19,000**	**32**	**240**	**0.09**	< 5.0	**17**	< 3.0	< 5.0	**19**	< 5.0	**20**	**29**
SS18	30-Oct-19	0.0	**9,100**	< 5.0	< 5.0	**79**	< 5.0	< 10	< 0.2	**27**	-	**6.0**	**6.0**	**8,700**	**100**	**140**	< 0.05	< 5.0	**10**	< 3.0	< 5.0	**19**	< 5.0	**15**	**15**
SS19	30-Oct-19	0.0	**17,000**	< 5.0	< 5.0	**130**	< 5.0	< 10	< 0.2	**110**	-	**28**	**13**	**40,000**	**31**	**590**	< 0.05	< 5.0	**26**	< 3.0	< 5.0	**25**	< 5.0	**74**	**32**
SS20	30-Oct-19	0.0	**26,000**	< 5.0	< 5.0	**230**	< 5.0	< 10	< 0.2	**130**	-	**18**	**21**	**42,000**	**90**	**460**	< 0.05	< 5.0	**49**	< 3.0	< 5.0	**30**	< 5.0	**82**	**60**
SS21	30-Oct-19	0.0	**8,400**	< 5.0	< 5.0	**65**	< 5.0	< 10	< 0.2	**46**	-	< 5.0	< 5.0	**29,000**	**27**	**84**	< 0.05	< 5.0	**9.0**	< 3.0	< 5.0	**7.0**	< 5.0	**30**	**14**
SS21A	30-Oct-19	0.0	-	< 10	**3.5**	**63**	< 2.0	< 10	< 0.4	**50**	-	< 5.0	< 5.0	-	**28**	**65**	< 0.1	< 5.0	**8.6**	< 2.0	< 0.2	-	< 10	**48**	**15**
SS22	30-Oct-19	0.0	-	< 5.0	< 5.0	**98**	< 5.0	< 10	< 0.2	**61**	< 1.0	**15**	**9.0**	-	**54**	**290**	< 0.05	< 5.0	**17**	< 3.0	< 5.0	-	< 5.0	**38**	**29**
SS23	30-Oct-19	0.0	**17,000**	< 5.0	< 5.0	**140**	< 5.0	< 10	< 0.2	**76**	-	**11**	**13**	**22,000**	**330**	**160**	< 0.05	< 5.0	**28**	**4.0**	< 5.0	**26**	< 5.0	**52**	**41**
SS24	30-Oct-19	0.0	**7,800**	< 5.0	**83**	**57**	< 5.0	< 10	< 0.2	**21**	-	< 5.0	**19**	**24,000**	**170**	**180**	< 0.05	< 5.0	**7.0**	< 3.0	< 5.0	**12**	< 5.0	**19**	**25**
SS25	30-Oct-19	0.0	**13,000**	< 5.0	**6.0**	**130**	< 5.0	< 10	< 0.2	**28**	-	< 5.0	**13**	**20,000**	**190**	**300**	< 0.05	< 5.0	**9.0**	< 3.0	< 5.0	**15**	< 5.0	**27**	**18**
SS26	30-Oct-19	0.0	**21,000**	< 5.0	**9.0**	**220**	< 5.0	< 10	< 0.2	**35**	-	**6.0**	**13**	**19,000**	**590**	**310**	< 0.05	< 5.0	**15**	**4.0**	< 5.0	**31**	< 5.0	**35**	**34**
SS27	30-Oct-19	0.0	**27,000**	< 5.0	**150**	**230**	< 5.0	< 10	< 0.2	**30**	-	**7.0**	**16**	**29,000**	**580**	**340**	**0.24**	< 5.0	**22**	**5.0**	< 5.0	**69**	< 5.0	**38**	**58**
SS28	30-Oct-19	0.0	-	< 5.0	< 5.0	**49**	< 5.0	< 10	< 0.2	**6.0**	< 1.0	< 5.0	< 5.0	-	**1,100**	**39**	< 0.05	< 5.0	< 5.0	< 3.0	< 5.0	-	< 5.0	**7.0**	**10**
SS29	30-Oct-19	0.0	**24,000**	< 5.0	**5.0**	**220**	< 5.0	< 10	< 0.2	**76**	-	**11**	**16**	**32,000**	**710**	**230**	< 0.05	< 5.0	**35**	**8.0**	< 5.0	**58**	< 5.0	**65**	**42**
SS30	30-Oct-19	0.0	**8,100**	< 5.0	< 5.0	**72**	< 5.0	< 10	< 0.2	**15**	-	< 5.0	< 5.0	**6,500**	**390**	**24**	< 0.05	< 5.0	**6.0**	< 3.0	< 5.0	**9.0**	< 5.0	**15**	**16**
BS01_0.1	08-Apr-20	0.1	-	-	**2.1**	-	-	-	< 0.4	**13**	-	-	**6.7**	-	**13**	-	-	-	**11**	-	-	-	-	-	**26**
BS06_0.1	08-Apr-20	0.1	-	-	**4.0**	-	-	-	< 0.4	**18**	-	-	**6.9**	-	**16**	-	-	-	**8.0**	-	-	-	-	-	**40**
BS10_0.1	08-Apr-20	0.1	-	-	**2.7**	-	-	-	< 0.4	**15**	< 1.0	-	**6.3**	-	**12**	-	< 0.1	< 5.0	**9.2**	< 2.0	< 0.2	-	< 10	-	**44**
CG01_0.1	08-Apr-20	0.1	-	-	**5.4**	-	-	-	< 0.4	**42**	-	-	**17**	-	**27**	-	-	-	**28**	-	-	-	-	-	**42**
CG02_0.1	08-Apr-20	0.1	-	-	**3.9**	-	-	-	< 0.4	**30**	-	-	**12**	-	**24**	-	-	-	**18**	-	-	-	-	-	**33**
CG02_0.5	08-Apr-20	0.5	-	-	**3.4**	-	-	-	< 0.4	**36**	-	-	**16**	-	**21**	-	-	-	**29**	-	-	-	-	-	**42**
CG03_0.1	08-Apr-20	0.1	-	-	< 2.0	-	-	-	< 0.4	**14**	-	-	< 5.0	-	**9.4**	-	-	-	< 5.0	-	-	-	-	-	**15**
CG04_0.1	08-Apr-20	0.1	-	-	**3.9**	-	-	-	< 0.4	**11**	-	-	< 5.0	-	**8.0**	-	-	-	< 5.0	-	-	-	-	-	**18**
CG05_0.1	08-Apr-20	0.1	-	-	**2.8**	-	-	-	< 0.4	**10**	-	-	< 5.0	-	**10**	-	-	-	**5.0**	-	-	-	-	-	**15**
CG06_0.1	08-Apr-20	0.1	-	-	**3.2**	-	-	-	< 0.4	**19**	-	-	**8.4**	-	**14**	-	-	-	**11**	-	-	-	-	-	**27**
CG07_0.1	08-Apr-20	0.1	-	-	**3.3**	-	-	-	< 0.4	**25**	-	-	**12**	-	**17**	-	-	-	**16**	-	-	-	-	-	**36**
CG08_0.1	08-Apr-20	0.1	-	-	**4.0**	-	-	-	< 0.4	**35**	-	-	**13**	-	**21**	-	-	-	**23**	-	-	-	-	-	**50**
CG08_0.5	08-Apr-20	0.5	-	-	**8.0**	-	-	-	< 0.4	**47**	-	-	**16**	-	**34**	-	-	-	**39**	-	-	-	-	-	**68**
CG09_0.1	08-Apr-20	0.1	-	-	< 2.0	-	-	-	< 0.4	**11**	-	-	< 5.0	-	**12**	-	-	-	< 5.0	-	-	-	-	-	**13**
CG10_0.1	08-Apr-20	0.1	-	-	**2.9**	-	-	-	< 0.4	**26**	-	-	**11**	-	**17**	-	-	-	**12**	-	-	-	-	-	**48**
CG10_0.7	08-Apr-20	0.7	-	-	**4.8**	-	-	-	< 0.4	**26**	-	-	**11**	-	**17**	-	-	-	**21**	-	-	-	-	-	**43**
CG11_0.1	08-Apr-20	0.1	-	-	**3.1**	-	-	-	< 0.4	**25**	-	-	**13**	-	**17**	-	-	-	**15**	-	-	-	-	-	**49**
CG12_0.1	08-Apr-20	0.1	-	-	**3.0**	-	-	-	< 0.4	**30**	-	-	**15**	-	**20**	-	-	-	**17**	-	-	-	-	-	**59**
FB01_0.1	08-Apr-20	0.1	-	-	**3.2**	-	-	-	< 0.4	**16**	-	-	< 5.0	-	**16**	-	-	-	< 5.0	-	-	-	-	-	**12**
FB02_0.1	08-Apr-20	0.1	-	-	< 2.0	-	-	-	< 0.4	**110**	-	-	**18**	-	**12**	-	-	-	**52**	-	-	-	-	-	**51**
FB03_0.1	08-Apr-20	0.1	-	-	< 2.0	-	-	-	< 0.4	**24**	< 1.0	-	**8.8**	-	**19**	-	< 0.1	< 5.0	**9.1**	< 2.0	< 0.2	-	< 10	-	**42**
FB04_0.1	08-Apr-20	0.1	-	-	**2.2**	-	-	-	< 0.4	**11**	-	-	< 5.0	-	**13**	-	-	-	< 5.0	-	-	-	-	-	**9.6**
FB05_0.1	08-Apr-20	0.1	-	-	**4.3**	-	-	-	< 0.4	**36**	< 1.0	-	**12**	-	**28**	-	< 0.1	< 5.0	**17**	< 2.0	< 0.2	-	< 10	-	**25**
MW01_0.1	02-Apr-20	0.1	-	-	**180**	-	-	-	< 0.4	**7.8**	-	-	**17**	-	**23**	-	-	-	**15**	-	-	-	-	-	**130**
MW02_0.1	02-Apr-20	0.1	-	-	**3.1**	-	-	-	< 0.4	**37**	-	-	**15**	-	**20**	-	-	-	**27**	-	-	-	-	-	**50**
MW03_0.1	02-Apr-20	0.1	-	-	**2.2**	-	-	-	< 0.4	**27**	-	-	**8.6**	-	**57**	-	-	-	**11**	-	-	-	-	-	**16**
MY01_0.1	09-Apr-20	0.1	-	-	**4.4**	-	-	-	< 0.4	**27**	< 1.0	-	**13**	-	**21**	-	< 0.1	< 5.0	**16**	< 2.0	< 0.2	-	< 10	-	**30**
MY02_0.1	09-Apr-20	0.1	-	-	**2.2**	-	-	-	< 0.4	**13**	-	-	< 5.0	-	**17**	-	-	-	**5.2**	-	-	-	-	-	**16**
MY03_0.1	09-Apr-20	0.1	-	-	< 2.0	-	-	-	< 0.4	**12**	-	-	< 5.0	-	**13**	-	-	-	**5.2**	-	-	-	-	-	**13**
MY04_0.1	09-Apr-20	0.1	-	-	**2.8**	-	-	-	< 0.4	**16**	-	-	**5.2**	-	**15**	-	-	-	**6.7**	-	-	-	-	-	**21**
MY05_0.1	09-Apr-20	0.1	-	-	< 2.0	-	-	-	< 0.4	**9.8**	-	-	< 5.0	-	**11**	-	-	-	< 5.0	-	-	-	-	-	**16**
OG01_0.1	06-Apr-20	0.1	-	-	**6.0**	-	-	-	< 0.4	**36**	-	-	**11**	-	**320**	-	-	-	**16**	-	-	-	-	-	**24**
OG02_0.1	07-Apr-20	0.1	-	-	**4.3**	-	-	-	< 0.4	**82**	-	-	**16**	-	**21**	-	-	-	**31**	-	-	-	-	-	**28**
OG03_0.1	06-Apr-20	0.1	-	-	**4.8**	-	-	-	< 0.4	**29**	-	-	**17**	-	**24**	-	-	-	**9.0**	-	-	-	-	-	**15**
OG04_0.1	06-Apr-20	0.1	-	-	**4.2**	-	-	-	< 0.4	**26**	-	-	**14**	-	**130**	-	-	-	**11**	-	-	-	-	-	**22**
OG05_0.1	06-Apr-20	0.1	-	-	**5.3**	-	-	-	< 0.4	**37**	-	-	**14**	-	**74**	-	-	-	**16**	-	-	-	-	-	**19**
OG06_0.1	06-Apr-20	0.1	-	-	**4.9**	-	-	-	< 0.4	**44**	-	-	**14**	-	**400**	-	-	-	**26**	-	-	-	-	-	**27**
OG07_0.1	06-Apr-20	0.1	-	-	**3.0**	-	-	-	< 0.4	**62**	-	-	**18**	-	**140**	-	-	-	**40**	-	-	-	-	-	**26**
OG08_0.1	07-Apr-20	0.1	-	-	**7.0**	-	-	-	< 0.4	**110**	-	-	**21**	-	**25**	-	-	-	**42**	-	-	-	-	-	**38**
OG09_0.1	07-Apr-20	0.1	-	-	< 2.0	-	-	-	< 0.4	**95**	-	-	**13**	-	**40**	-	-	-	**26**	-	-	-	-	-	**35**
OG10_0.1	07-Apr-20	0.1	-	-	**2.4**	-	-	-	< 0.4	**93**	-	-	**20**	-	**54**	-	-	-	**40**	-	-	-	-	-	**44**
OG11_0.5	02-Apr-20	0.5	-	-	**9.4**	-	-	-	< 0.4	**32**	-	-	**16**	-	**17**	-	-	-	**10**	-	-	-	-	-	**27**
OG12_0.1	06-Apr-20	0.1	-	-	**2.1**	-	-	-	< 0.4	**44**	-	-	**10**	-	**130**	-	-	-	**26**	-	-	-	-	-	**26**
OG13_0.1	06-Apr-20	0.1	-	-	< 2.0	-	-	-	< 0.4	**42**	-	-	**18**	-	**14**	-	-	-	**28**	-	-	-	-	-	**73**
OG13_0.7	06-Apr-20	0.7	-	-	< 2.0	-	-	-	< 0.4	**26**	-	-	**12**	-	**11**	-	-	-	**22**	-	-	-	-	-	**89**
OG14_0.1	07-Apr-20	0.1	-	-	**12**	-	-	-	< 0.4	**17**	-	-	< 5.0	-	**19**	-	-	-	**6.2**	-	-	-	-	-	**20**
OG14_0.5	07-Apr-20	0.5	-	-	**8.5**	-	-	-	< 0.4	**20**	-	-	**5.0**	-	**13**	-	-	-	**6.9**	-	-	-	-	-	**19**

Table 3
Soil Analytical Data - Metals
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Metals																				
			Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Chromium VI	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Strontium	Tin	Vanadium	Zinc
LOR			5.0	5.0	2.0	5.0	2.0	10	0.4	5.0	1.0	5.0	5.0	20	5.0	5.0	0.1	5.0	5.0	2.0	0.2	5.0	10	5.0	5.0
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL C - Recreational (NEPM 2013)			--	--	300	--	90	20,000	90	--	300	300	17,000	--	600	19,000	80	--	1,200	700	--	--	--	--	30,000
EIL - Urban Residential/Public Open Space (NEPM 2013)			--	--	100	--	--	--	--	500	--	--	120	--	1,100	--	--	--	120	--	--	--	--	--	260
Sample Name	Sample Date	Start Depth (m)																							
OG15_0.1	07-Apr-20	0.1	-	-	**2.8**	-	-	-	< 0.4	**15**	-	-	< 5.0	-	**12**	-	-	-	< 5.0	-	-	-	-	-	**15**
OG15_0.7	07-Apr-20	0.7	-	-	**4.1**	-	-	-	< 0.4	**27**	-	-	**6.0**	-	**23**	-	-	-	**8.0**	-	-	-	-	-	**21**
OG16_0.1	07-Apr-20	0.1	-	-	**2.9**	-	-	-	< 0.4	**19**	-	-	**5.4**	-	**290**	-	-	-	**6.9**	-	-	-	-	-	**22**
OG16_0.4	07-Apr-20	0.4	-	-	**2.3**	-	-	-	< 0.4	**22**	-	-	< 5.0	-	**28**	-	-	-	**6.9**	-	-	-	-	-	**19**
OG17_0.1	07-Apr-20	0.1	-	-	**2.7**	-	-	-	< 0.4	**14**	-	-	< 5.0	-	**92**	-	-	-	**5.5**	-	-	-	-	-	**14**
OG18_0.1	07-Apr-20	0.1	-	-	**2.3**	-	-	-	< 0.4	**15**	-	-	< 5.0	-	**49**	-	-	-	**5.4**	-	-	-	-	-	**16**
OG19_0.1	07-Apr-20	0.1	-	-	**5.4**	-	-	-	< 0.4	**27**	-	-	**8.3**	-	**35**	-	-	-	**12**	-	-	-	-	-	**24**
OG20_0.1	07-Apr-20	0.1	-	-	**2.3**	-	-	-	< 0.4	**13**	-	-	< 5.0	-	**130**	-	-	-	**7.3**	-	-	-	-	-	**12**
OG20_0.4	07-Apr-20	0.4	-	-	**6.8**	-	-	-	< 0.4	**47**	-	-	**12**	-	**50**	-	-	-	**14**	-	-	-	-	-	**20**
OG21_0.1	06-Apr-20	0.1	-	-	**4.9**	-	-	-	< 0.4	**28**	-	-	**11**	-	**36**	-	-	-	**14**	-	-	-	-	-	**22**
OG22_0.1	07-Apr-20	0.1	-	-	< 2.0	-	-	-	< 0.4	**12**	-	-	**8.5**	-	**15**	-	-	-	**6.1**	-	-	-	-	-	**33**
OG23_0.1	07-Apr-20	0.1	-	-	**3.1**	-	-	-	< 0.4	**30**	-	-	**8.8**	-	**65**	-	-	-	**15**	-	-	-	-	-	**22**
OG24_0.1	07-Apr-20	0.1	-	-	**2.5**	-	-	-	< 0.4	**16**	-	-	< 5.0	-	**16**	-	-	-	< 5.0	-	-	-	-	-	**21**
OG24_0.5	07-Apr-20	0.5	-	-	**2.5**	-	-	-	< 0.4	**19**	-	-	**5.1**	-	**14**	-	-	-	**5.0**	-	-	-	-	-	**17**
OG25_0.1	07-Apr-20	0.1	-	-	**3.5**	-	-	-	< 0.4	**78**	-	-	**24**	-	**53**	-	-	-	**44**	-	-	-	-	-	**39**
OG25_1.0	07-Apr-20	1.0	-	-	**4.8**	-	-	-	< 0.4	**81**	-	-	**22**	-	**21**	-	-	-	**59**	-	-	-	-	-	**39**
OG26_0.1	07-Apr-20	0.1	-	-	**4.5**	-	-	-	< 0.4	**20**	-	-	**7.5**	-	**98 ***	-	-	-	**10**	-	-	-	-	-	**42**
OG27_0.1	07-Apr-20	0.1	-	-	**3.8**	-	-	-	< 0.4	**26**	-	-	**7.8**	-	**15**	-	-	-	**14**	-	-	-	-	-	**19**
OG28_0.1	07-Apr-20	0.1	-	-	**7.2**	-	-	-	< 0.4	**49**	-	-	**17**	**30,000**	**76**	-	-	-	**34**	-	-	-	-	-	**43**
OG29_0.1	06-Apr-20	0.1	-	-	**3.8**	-	-	-	< 0.4	**38**	-	-	**11**	-	**23**	-	-	-	**25**	-	-	-	-	-	**47**
OG30_0.1	06-Apr-20	0.1	-	-	**6.7**	-	-	-	< 0.4	**54**	-	-	**18**	-	**28**	-	-	-	**40**	-	-	-	-	-	**60**
OG31_0.1	06-Apr-20	0.1	-	-	**49**	-	-	-	< 0.4	**32**	-	-	**15**	-	**43**	-	-	-	**23**	-	-	-	-	-	**69**
OG32_0.1	06-Apr-20	0.1	-	-	**5.1**	-	-	-	< 0.4	**23**	-	-	**7.0**	-	**34**	-	-	-	**9.3**	-	-	-	-	-	**29**
OG33_0.1	06-Apr-20	0.1	-	-	**3.5**	-	-	-	< 0.4	**21**	-	-	**13**	-	**91**	-	-	-	**19**	-	-	-	-	-	**27**
OG34_0.1	06-Apr-20	0.1	-	-	< 2.0	-	-	-	< 0.4	**10**	-	-	< 5.0	-	**38**	-	-	-	< 5.0	-	-	-	-	-	**12**
OG35_0.1	06-Apr-20	0.1	-	-	**5.6**	-	-	-	< 0.4	**12**	-	-	**5.5**	-	**26**	-	-	-	**7.4**	-	-	-	-	-	**18**
OG36_0.1	06-Apr-20	0.1	-	-	**9.1**	-	-	-	< 0.4	**27**	-	-	**11**	-	**170**	-	-	-	**17**	-	-	-	-	-	**28**
OG36_0.6	06-Apr-20	0.6	-	-	**10***	-	-	-	< 0.4	**27**	-	-	**12**	-	**33**	-	-	-	**11**	-	-	-	-	-	**23**
OG37_0.1	06-Apr-20	0.1	-	-	< 2.0	-	-	-	< 0.4	**6.8**	-	-	< 5.0	-	**8.6**	-	-	-	< 5.0	-	-	-	-	-	**9.8**
OG38_0.1	06-Apr-20	0.1	-	-	**3.0**	-	-	-	< 0.4	**130**	-	-	**44**	-	**350**	-	-	-	**100**	-	-	-	-	-	**100**
OG39_0.1	06-Apr-20	0.1	-	-	**3.2**	-	-	-	< 0.4	**39**	-	-	**11**	-	**60**	-	-	-	**19**	-	-	-	-	-	**34**
OG40_0.1	06-Apr-20	0.1	-	-	**5.0**	-	-	-	< 0.4	**27**	-	-	**13**	-	**52**	-	-	-	**17**	-	-	-	-	-	**35**
OG41_0.1	06-Apr-20	0.1	-	-	**4.5**	-	-	-	< 0.4	**29**	-	-	**10**	-	**17**	-	-	-	**15**	-	-	-	-	-	**29**
OG42_0.1	07-Apr-20	0.1	-	-	**4.9**	-	-	-	< 0.4	**170**	-	-	**30**	-	**170**	-	-	-	**72**	-	-	-	-	-	**74**
OG43_0.1	07-Apr-20	0.1	-	-	< 2.0	-	-	-	< 0.4	**79**	-	-	**9.2**	-	**47**	-	-	-	**26**	-	-	-	-	-	**25**
OG44_0.1	07-Apr-20	0.1	-	-	**2.7**	-	-	-	< 0.4	**130**	-	-	**26**	-	**17**	-	-	-	**69**	-	-	-	-	-	**71**
OG45_0.1	07-Apr-20	0.1	-	-	**4.6**	-	-	-	< 0.4	**60**	-	-	**18**	-	**470**	-	-	-	**28**	-	-	-	-	-	**36**
OG46_0.1	06-Apr-20	0.1	-	-	**4.6**	-	-	-	< 0.4	**43**	-	-	**15**	-	**29**	-	-	-	**28**	-	-	-	-	-	**34**
OG47_0.1	06-Apr-20	0.1	-	-	**4.4**	-	-	-	< 0.4	**33**	-	-	**18**	-	**100**	-	-	-	**21**	-	-	-	-	-	**56**
OG48_0.1	06-Apr-20	0.1	-	-	**2.0**	-	-	-	< 0.4	**17**	-	-	**6.9**	-	**19**	-	-	-	< 5.0	-	-	-	-	-	**13**
OG49_0.1	06-Apr-20	0.1	-	-	**2.8**	-	-	-	< 0.4	**17**	-	-	**12**	-	**22**	-	-	-	**6.5**	-	-	-	-	-	**12**
OG49_0.5	06-Apr-20	0.5	-	-	-	-	-	-	-	-	-	-	-	**14,000**	-	-	-	-	-	-	-	-	-	-	-
OG50_0.1	09-Apr-20	0.1	-	-	**2.2**	-	-	-	< 0.4	**67**	-	-	**12**	-	**25**	-	-	-	**23**	-	-	-	-	-	**22**
OG51_0.1	09-Apr-20	0.1	-	-	**2.4**	-	-	-	< 0.4	**87**	-	-	**13**	-	**21**	-	-	-	**26**	-	-	-	-	-	**28**
OG52_0.1	09-Apr-20	0.1	-	-	< 2.0	-	-	-	< 0.4	**13**	-	-	< 5.0	-	**12**	-	-	-	< 5.0	-	-	-	-	-	**22**
OG53_0.1	09-Apr-20	0.1	-	-	**12**	-	-	-	< 0.4	**37**	-	-	**13**	**23,000**	**81**	-	-	-	**18**	-	-	-	-	-	**27**
OG53_0.5	09-Apr-20	0.5	-	-	-	-	-	-	-	-	-	-	-	**19,000**	-	-	-	-	-	-	-	-	-	-	-
PV01_0.1	08-Apr-20	0.1	-	-	**6.2**	-	-	-	< 0.4	**35**	-	-	**9.9**	-	**52**	-	-	-	**23**	-	-	-	-	-	**38**
PV03_0.1	08-Apr-20	0.1	-	-	**180**	-	-	-	< 0.4	**25**	-	-	**22**	-	**59**	-	-	-	**36**	-	-	-	-	-	**98**
PV05_0.1	08-Apr-20	0.1	-	-	**79**	-	-	-	< 0.4	**27**	-	-	**17**	-	**58**	-	-	-	**22**	-	-	-	-	-	**130**
PV07_0.7	08-Apr-20	0.7	-	-	**5.3**	-	-	-	< 0.4	**25**	< 1.0	-	**7.6**	-	**17**	-	< 0.1	< 5.0	**14**	< 2.0	< 0.2	-	< 10	-	**37**
PV10_0.1	08-Apr-20	0.1	-	-	**8.0**	-	-	-	< 0.4	**30**	-	-	**12**	-	**45**	-	-	-	**18**	-	-	-	-	-	**94**
SD01	09-Apr-20	0.0	-	-	**35 ***	-	-	-	< 0.4	**17**	-	-	**10**	-	**16**	-	-	-	**11**	-	-	-	-	-	**39**
SD02	09-Apr-20	0.0	-	-	**2.3**	-	-	-	< 0.4	**7.6**	-	-	< 5.0	-	**6.3**	-	-	-	< 5.0	-	-	-	-	-	**12**

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
mg/kg - Milligrams per kilogram
Bold indicates a detection above the laboratory limit of reporting
"*" denotes duplicate/triplicate sample result adopted for analytical use due to RPD >50%
Highlighting indicates an exceedance of the corresponding criteria (highlighting corresponds to the guideline with the highest criteria value where analytical result exceeds more than one guideline)
RPD - Relative Percentage Difference

Criteria:
National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).

Table 3A
Soil Analytical Data - Metals
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Metals																
			Arsenic	Beryllium	Boron	Cadmium	Chromium	Chromium VI	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Zinc
LOR			2.0	2.0	10	0.4	5.0	1.0	5.0	5.0	20	5.0	5.0	0.1	5.0	5.0	2.0	0.2	10	5.0
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL A - Residential (NEPM 2013)			100	60	4,500	20	--	100	100	6,000	--	300	3,800	40	--	400	200	--	--	7,400
EIL - Urban Residential/Public Open Space (NEPM 2013)			100	--	--	--	500	--	--	120	--	1,100	--	--	--	120	--	--	--	260
Sample Name	Sample Date	Start Depth (m)																		
PG01_0.1	09-Apr-20	0.1	**10 ***	-	-	< 0.4	**62 ***	-	-	**13**	-	**17**	-	-	-	**25**	-	-	-	**46**
PG02_0.1	09-Apr-20	0.1	**5.2**	< 2.0	< 10	< 0.4	**21**	< 1.0	**5.3**	**9.4**	-	**31**	**320**	< 0.1	-	**10**	< 2.0	-	-	**89**
PG03_0.1	09-Apr-20	0.1	**4.5**	-	-	< 0.4	**23**	-	-	**14**	-	**20**	-	-	-	**14**	-	-	-	**44**
PG04_0.1	09-Apr-20	0.1	**4.3**	-	-	< 0.4	**22**	-	-	**8.7**	-	**27**	-	-	-	**12**	-	-	-	**39**
PG05_0.1	09-Apr-20	0.1	**6.2**	-	-	< 0.4	**22**	-	-	**11**	-	**22**	-	-	-	**11**	-	-	-	**47**

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
mg/kg - Milligrams per kilogram
Bold indicates a detection above the laboratory limit of reporting
"*" denotes duplicate/triplicate sample result adopted for analytical use due to RPD >50%
Highlighting indicates an exceedance of the corresponding criteria (highlighting corresponds to the guideline with the highest criteria value where analytical result exceeds more than one guideline)
RPD - Relative Percentage Difference

Criteria:
National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).

Table 3B
Soil Analytical Data - Metals
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Metals													
			Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc
LOR			2.0	2.0	2.0	10	0.4	5.0	5.0	5.0	5.0	5.0	0.1	5.0	2.0	5.0	5.0
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL A - Residential (NEPM 2013)			100	--	60	4,500	20	--	100	6,000	300	3,800	40	400	200	--	7,400
EIL - Urban Residential/Public Open Space (NEPM 2013)			100	--	--	--	--	500	--	120	1,100	--	--	120	--	--	260
Sample Name	Sample Date	Start Depth (m)															
AV01	03-Mar-21	0.0	**6.0**	**100**	< 1.0	<50	< 1.0	**25**	**4.0**	**10**	**59**	**45**	<0.1	**14**	<5	**26**	**21**
AV02	03-Mar-21	0.0	**15**	**220**	**1.0**	<50	< 1.0	**33**	**16**	**16**	**318**	**660**	<0.1	**28**	<5	**38**	**36**

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
mg/kg - Milligrams per kilogram
Bold indicates a detection above the laboratory limit of reporting
"*" denotes duplicate/triplicate sample result adopted for analytical use due to RPD >50%
Highlighting indicates an exceedance of the corresponding criteria (highlighting corresponds to the guideline with the highest criteria value where analytical result exceeds more than one guideline)
RPD - Relative Percentage Difference

Criteria:
National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).

Table 3C
Soil Analytical Data - Metals
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Metals
			Lead
LOR			5.0
Units			mg/kg
HIL A - Residential (NEPM 2013)			300
Sample Name	Sample Date	Start Depth (m)	
SB01_0.15	05-Jan-21	0.15	**12**
SB02_0.1	05-Jan-21	0.1	**16**
SB03_0.15	05-Jan-21	0.15	**13**
SB04_0.1	05-Jan-21	0.1	**11**
SB05_0.1	05-Jan-21	0.1	**11**
SB06_0.1	05-Jan-21	0.1	**12**
SB07_0.1	05-Jan-21	0.1	**35**
SB08_0.1	05-Jan-21	0.1	**33**
SB09_0.1	05-Jan-21	0.1	**17**
SB10_0.1	05-Jan-21	0.1	**19**
SB11_0.1	05-Jan-21	0.1	**16**
SB12_0.1	05-Jan-21	0.1	**21**
SB13_0.1	05-Jan-21	0.1	**52**
SB14_0.1	05-Jan-21	0.1	**16**

Notes:
mg/kg - Milligrams per kilogram
Bold indicates a detection above the laboratory limit of reporting

Criteria:
National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).

Table 4
Soil Analytical Data - PAHs
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Polycyclic Aromatic Hydrocarbons																	
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Chrysene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-c,d]pyrene	Dibenz[a,h]anthracene	Benzo[g,h,i]perylene	Total PAH	Benzo[a]pyrene TEQ (Zero)	Benzo[a]pyrene TEQ (Half LOR)
LOR			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL C - Recreational (NEPM 2013)			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	3.0	3.0
ESL - Urban Residential/Public Open Space, Coarse (CRC Care 39)			--	--	--	--	--	--	--	--	--	--	--	--	33	--	--	--	--	--	--
EIL - Urban Residential/Public Open Space (NEPM 2013)			170	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HSL C - Direct Contact (CRC CARE 2011)			1,900	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HSL - Direct Contact Maintanence Workers (CRC CARE 2011)			29,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date	Start Depth (m)																			
SS01	30-Oct-19	0.0	< 0.1	< 0.1	**0.2**	< 0.1	**0.8**	**0.2**	**3.5**	**3.0**	**3.2**	**2.3**	**3.6**	**3.4**	**3.8**	**2.3**	**0.9**	**2.7**	**30**	**5.9**	**5.9**
SS02	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.2**	**0.2**	**0.2**	**0.1**	**0.3**	**0.2**	**0.3**	**0.2**	< 0.1	**0.2**	**1.9**	**0.4**	**0.4**
SS03	30-Oct-19	0.0	< 0.1	< 0.1	**0.2**	< 0.1	**1.0**	**0.2**	**2.8**	**2.5**	**2.1**	**1.8**	**2.3**	**1.7**	**2.3**	**2.1**	**0.4**	**1.8**	**21**	**3.5**	**3.5**
SS04	30-Oct-19	0.0	< 0.1	< 0.1	**0.1**	< 0.1	**0.6**	**0.1**	**2.5**	**2.1**	**2.2**	**1.5**	**2.3**	**2.1**	**2.3**	**1.4**	**0.5**	**1.6**	**19**	**3.6**	**3.6**
SS05	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**	< 0.1	**0.5**	**0.4**	**0.5**	**0.3**	**0.5**	**0.5**	**0.6**	**0.3**	**0.2**	**0.4**	**4.3**	**1.0**	**1.0**
SS06	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**
SS07	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**	< 0.1	**0.6**	**0.5**	**0.5**	**0.4**	**0.6**	**0.6**	**0.7**	**0.4**	**0.2**	**0.5**	**5.1**	**1.1**	**1.1**
SS08	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.3**	**0.3**	**0.2**	**0.2**	**0.2**	**0.2**	**0.3**	**0.2**	< 0.1	**0.2**	**2.1**	**0.4**	**0.4**
SS09	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.2**	**0.2**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.1**	< 0.1	**0.1**	**1.2**	**0.2**	**0.3**
SS10	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**
SS11	30-Oct-19	0.0	**0.2**	< 0.1	**1.2**	**0.5**	**6.6**	**1.0**	**17**	**15**	**12**	**9.7**	**14**	**9.3**	**12**	**11**	**2.3**	**9.9**	**120**	**19**	**19**
SS12	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	< 0.1	**0.2**	**1.7**	**0.3**	**0.3**
SS13	30-Oct-19	0.0	< 0.1	< 0.1	**0.4**	**0.1**	**2.0**	**0.4**	**9.9**	**8.1**	**8.0**	**5.3**	**8.6**	**8.1**	**8.7**	**5.5**	**2.2**	**5.9**	**73**	**14**	**14**
SS14	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**	< 0.1	**0.1**	< 0.1	**0.1**	**0.1**	**0.1**	< 0.1	< 0.1	< 0.1	**0.5**	**0.1**	**0.2**
SS15	30-Oct-19	0.0	< 0.1	< 0.1	**8.6**	**4.1**	**53**	**7.9**	**120**	**100**	**82**	**69**	**86**	**55**	**76**	**54**	**15**	**50**	**780**	**120**	**120**
SS16	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**
SS17	30-Oct-19	0.0	**0.2**	< 0.1	**1.5**	**0.5**	**4.7**	**0.9**	**18**	**14**	**12**	**9.6**	**12**	**12**	**13**	**8.5**	**3.3**	**9.2**	**120**	**21**	**21**
SS18	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.3**	**0.3**	**0.3**	**0.2**	**0.4**	**0.3**	**0.4**	**0.2**	**0.1**	**0.3**	**2.8**	**0.6**	**0.6**
SS19	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**
SS20	30-Oct-19	0.0	< 0.1	< 0.1	**0.1**	< 0.1	**0.3**	< 0.1	**1.3**	**1.1**	**1.0**	**0.8**	**1.2**	**1.1**	**1.3**	**0.8**	**0.4**	**0.9**	**10**	**2.1**	**2.1**
SS21	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**
SS22	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**	< 0.1	**0.4**	**0.4**	**0.3**	**0.3**	**0.4**	**0.3**	**0.4**	**0.3**	< 0.1	**0.3**	**3.2**	**0.5**	**0.6**
SS23	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.3**	**0.3**	**0.3**	**0.2**	**0.3**	**0.3**	**0.4**	**0.2**	< 0.1	**0.3**	**2.6**	**0.5**	**0.6**
SS24	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**
SS25	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**
SS26	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**
SS27	30-Oct-19	0.0	**0.2**	< 0.1	**1.5**	**0.5**	**6.2**	**1.1**	**19**	**15**	**14**	**12**	**15**	**14**	**16**	**8.8**	**3.6**	**9.2**	**140**	**25**	**25**
SS28	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	**0.7**	**0.2**	**2.4**	**2.2**	**2.7**	**2.6**	**2.9**	**2.5**	**3.3**	**2.7**	**0.6**	**2.3**	**25**	**5.0**	**5.0**
SS29	30-Oct-19	0.0	**0.3**	< 0.1	**2.5**	**0.7**	**9.0**	**2.1**	**37**	**30**	**29**	**24**	**29**	**28**	**30**	**19**	**7.9**	**20**	**270**	**48**	**48**
SS30	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**
BS01_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
BS06_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
BS10_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG01_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG02_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG02_0.5	08-Apr-20	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG03_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG04_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG05_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG06_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG07_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG08_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG08_0.5	08-Apr-20	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG09_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG10_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG10_0.7	08-Apr-20	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG11_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
CG12_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
FB01_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
FB02_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
FB03_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
FB04_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
FB05_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
MW01_0.1	02-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
MW02_0.1	02-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
MW03_0.1	02-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
MY01_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
MY02_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
MY03_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
MY04_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
MY05_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG01_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG02_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG03_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG04_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**1.3**	**1.3**	**0.8**	**0.7**	**0.7**	**0.9**	**1.1**	< 0.5	< 0.5	**6.8**	**1.3**	**1.6**
OG05_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG06_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG07_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG08_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG09_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.7**	**0.8**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**1.5**	< 0.5	**0.6**
OG10_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG11_0.5	02-Apr-20	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG12_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG13_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG13_0.7	06-Apr-20	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG14_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG14_0.5	07-Apr-20	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**

Table 4
Soil Analytical Data - PAHs
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Polycyclic Aromatic Hydrocarbons																	
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Chrysene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-c,d]pyrene	Dibenz[a,h]anthracene	Benzo[g,h,i]perylene	Total PAH	Benzo[a]pyrene TEQ (Zero)	Benzo[a]pyrene TEQ (Half LOR)
LOR			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL C - Recreational (NEPM 2013)			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	3.0	3.0
ESL - Urban Residential/Public Open Space, Coarse (CRC Care 39)			--	--	--	--	--	--	--	--	--	--	--	--	33	--	--	--	--	--	--
EIL - Urban Residential/Public Open Space (NEPM 2013)			170	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HSL C - Direct Contact (CRC CARE 2011)			1,900	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HSL - Direct Contact Maintanence Workers (CRC CARE 2011)			29,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date	Start Depth (m)																			
OG15_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG15_0.7	07-Apr-20	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG16_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG16_0.4	07-Apr-20	0.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG17_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG18_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG19_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG20_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG20_0.4	07-Apr-20	0.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG21_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**	< 0.5	**1.9**	**1.9**	**1.6**	**1.1**	**2.1**	**2.0**	**1.9**	**0.6**	< 0.5	< 0.5	**14**	**2.5**	**2.7**
OG22_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG23_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG24_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG24_0.5	07-Apr-20	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG25_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG25_1.0	07-Apr-20	1.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG26_0.1	07-Apr-20	0.1	< 0.5	< 0.5	**1.0 ***	< 0.5	**7.1 ***	**1.4 ***	**25 ***	**23 ***	**15 ***	**11 ***	**12 ***	**11 ***	**13 ***	**9.2 ***	**2.2 ***	**8.4 ***	**139 ***	**20 ***	**20 ***
OG26_0.4	07-Apr-20	0.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG27_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG28_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**2.2**	**2.0**	**1.6**	**1.0**	**1.6**	**1.7**	**1.7**	**1.2**	< 0.5	**1.3**	**14**	**2.3**	**2.5**
OG29_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG30_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG31_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG32_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG33_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG34_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG35_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.7**	< 0.5	**0.9**	< 0.5	**0.6**	< 0.5	< 0.5	< 0.5	< 0.5	**2.2**	**0.7**	**1.0**
OG36_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.7**	**0.8**	**1.3**	**0.6**	**1.1**	**1.5**	**1.4**	**0.8**	< 0.5	**1.1**	**9.3**	**1.8**	**2.1**
OG36_0.6	06-Apr-20	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG37_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG38_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG39_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG40_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG41_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG42_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	**1.4**	< 0.5	**4.9**	**4.5**	**3.0**	**1.7**	**2.7**	**2.3**	**2.5**	**1.8**	**0.8**	**1.7**	**27**	**4.2**	**4.2**
OG42_0.4	07-Apr-20	0.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG43_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG44_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG45_0.1	07-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG46_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG47_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	**1.1**	< 0.5	**2.4**	**2.3**	**1.8**	**1.0**	**1.2**	**1.3**	**1.3**	**0.9**	< 0.5	**0.8**	**14**	**1.8**	**2.0**
OG48_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG49_0.1	06-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG50_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG51_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG52_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
OG53_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**2.4 ***	< 0.5	**0.6**
PV01_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
PV03_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
PV05_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
PV07_0.7	08-Apr-20	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
PV10_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SD01	09-Apr-20	0.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SD02	09-Apr-20	0.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**

Notes:
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
mg/kg - Milligrams per kilogram
Bold indicates a detection above the laboratory limit of reporting
"*" denotes duplicate/triplicate sample result adopted for analytical use due to RPD >50%
Highlighting indicates an exceedance of the corresponding criteria (highlighting corresponds to the guideline with the highest criteria value where analytical result exceeds more than one guideline)
RPD - Relative Percentage Difference

Criteria:
National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).
CRC CARE Technical Report No. 10 - Health Screening Level (HSL) for Petroleum Hydrocarbons in Soil and Groundwater, Part 2: Application Document (2011).

Table 4A
Soil Analytical Data - PAHs
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Polycyclic Aromatic Hydrocarbons																	
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Chrysene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-c,d]pyrene	Dibenz[a,h]anthracene	Benzo[g,h,i]perylene	Total PAH	Benzo[a]pyrene TEQ (Zero)	Benzo[a]pyrene TEQ (Half LOR)
LOR			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL A - Residential (NEPM 2013)			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	3.0	3.0
ESL - Urban Residential/Public Open Space, Coarse (CRC Care 39)			--	--	--	--	--	--	--	--	--	--	--	--	33	--	--	--	--	--	--
EIL - Urban Residential/Public Open Space (NEPM 2013)			170	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HSL A - Direct Contact (CRC CARE 2011)			1,400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HSL - Direct Contact Maintanence Workers (CRC CARE 2011)			29,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date	Start Depth (m)																			
PG01_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
PG02_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
PG03_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
PG04_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
PG05_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**

Notes:
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
mg/kg - Milligrams per kilogram
Bold indicates a detection above the laboratory limit of reporting
"*" denotes duplicate/triplicate sample result adopted for analytical use due to RPD >50%
Highlighting indicates an exceedance of the corresponding criteria (highlighting corresponds to the guideline with the highest criteria value where analytical result exceeds more than one guideline)
RPD - Relative Percentage Difference

Criteria:
National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).
CRC CARE Technical Report No. 10 - Health Screening Level (HSL) for Petroleum Hydrocarbons in Soil and Groundwater, Part 2: Application Document (2011).

Table 4B
Soil Analytical Data - PAHs
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Polycyclic Aromatic Hydrocarbons																		
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Chrysene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-c,d]pyrene	Dibenz[a,h]anthracene	Benzo[g,h,i]perylene	Total PAH	Benzo[a]pyrene TEQ (Zero)	Benzo[a]pyrene TEQ (Half LOR)
LOR			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL A - Residential (NEPM 2013)			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	3.0	3.0
HSL A - Direct Contact (CRC CARE 2011)			1,400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HSL (Vapour Intrusion) A & B - CLAY (NEPM 2013)		0 m - <1 m	5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1 m - <2 m	NL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		2 m - <4 m	NL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		4 m +	NL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date	Start Depth (m)																			
SB01_0.15	05-Jan-21	0.15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SB02_0.1	05-Jan-21	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SB03_0.15	05-Jan-21	0.15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SB04_0.1	05-Jan-21	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SB05_0.1	05-Jan-21	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SB06_0.1	05-Jan-21	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SB07_0.1	05-Jan-21	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SB08_0.1	05-Jan-21	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SB09_0.1	05-Jan-21	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SB10_0.1	05-Jan-21	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SB11_0.1	05-Jan-21	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SB12_0.1	05-Jan-21	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SB13_0.1	05-Jan-21	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SB14_0.1	05-Jan-21	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**

Notes:
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
NL - Not limiting
mg/kg - Milligrams per kilogram
Bold indicates a detection above the laboratory limit of reporting

Criteria:
National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).
CRC CARE Technical Report No. 10 - Health Screening Level (HSL) for Petroleum Hydrocarbons in Soil and Groundwater, Part 2: Application Document (2011).

Table 4C
Soil Analytical Data - PAHs
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Polycyclic Aromatic Hydrocarbons																		
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Chrysene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-c,d]pyrene	Dibenz[a,h]anthracene	Benzo[g,h,i]perylene	Total PAH	Benzo[a]pyrene TEQ (Zero)	Benzo[a]pyrene TEQ (Half LOR)
LOR			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL A - Residential (NEPM 2013)			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	3.0	3.0
HSL A - Direct Contact (CRC CARE 2011)			1,400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HSL (Vapour Intrusion) A & B - CLAY (NEPM 2013)		0 m - <1 m	5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1 m - <2 m	NL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		2 m - <4 m	NL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		4 m +	NL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date	Start Depth (m)																			
AV01	03-Mar-21	0.0	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 1.4	< 0.7	**2.8**
AV02	03-Mar-21	0.0	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 1.4	< 0.7	**2.8**

Notes:
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
NL - Not limiting
mg/kg - Milligrams per kilogram
Bold indicates a detection above the laboratory limit of reporting

Criteria:
National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).
CRC CARE Technical Report No. 10 - Health Screening Level (HSL) for Petroleum Hydrocarbons in Soil and Groundwater, Part 2: Application Document (2011).

Table 4D
Soil Analytical Data - PAHs
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte				Polycyclic Aromatic Hydrocarbons																		
				Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Chrysene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-c,d]pyrene	Dibenz[a,h]anthracene	Benzo[g,h,i]perylene	Total PAH	Benzo[a]pyrene TEQ (Zero)	Benzo[a]pyrene TEQ (Half LOR)
LOR				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Units				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL C - Recreational (NEPM 2013)				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	3.0	3.0
EIL - Urban Residential/Public Open Space (NEPM 2013)				170	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date	Start Depth (m)																				
S1	16-Dec-21	0.0		**2.3**	< 0.5	**14**	**5.0**	**57**	**8.7**	**120**	**120**	**79**	**70**	**80**	**71**	**89**	**54**	**18**	**100**	**888**	**140**	**140**
SS15_1_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	**1.0**	< 0.5	**3.1**	**2.9**	**1.3**	**0.8**	**3.9**	**1.6**	**2.0**	**1.1**	< 0.5	**0.8**	**19**	**2.8**	**3.0**
SS15_2_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	**3.4**	**0.8**	**9.4**	**8.6**	**4.4**	**2.8**	**11**	**4.6**	**6.1**	**3.5**	**0.9**	**2.3**	**58**	**9.3**	**9.3**
SS15_3_0.0-0.1	16-Dec-21	0.0	Lab report 854503	< 0.5	< 0.5	< 0.5	< 0.5	**0.9**	< 0.5	**3.0**	**2.8**	**1.1**	**0.7**	**3.1**	**1.6**	**2.0**	**1.1**	< 0.5	**0.7**	**17**	**2.7**	**2.9**
SS15_4_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	**1.3**	**0.5**	**8.3**	**2.4**	**26**	**23**	**10**	**6.2**	**29**	**13**	**17**	**8.4**	**2.1**	**5.2**	**152**	**25**	**25**
SS15_5_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	**1.3**	< 0.5	**5.0**	**4.6**	**2.1**	**1.3**	**7.1**	**2.5**	**3.6**	**2.1**	**0.7**	**1.4**	**32**	**5.6**	**5.6**
SS15_6_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	**0.9**	< 0.5	**3.2**	**2.9**	**1.2**	**0.8**	**4.1**	**1.8**	**2.2**	**1.2**	< 0.5	**0.9**	**19**	**3.0**	**3.3**
SS27_1_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SS27_2_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**1.5**	**1.5**	**0.7**	< 0.5	**2.3**	**0.9**	**1.2**	**1.0**	< 0.5	< 0.5	**9.1**	**1.6**	**1.9**
SS27_3_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SS27_4_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SS27_5_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	**0.7**	< 0.5	**5.2**	**1.2**	**14**	**13**	**6.4**	**4.2**	**18**	**6.5**	**10**	**6.4**	**1.8**	**4.6**	**92**	**15**	**15**
SS27_6_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SS29_1_0.0-0.1	16-Dec-21	0.0		**0.8**	< 0.5	**4.1**	**1.7**	**21**	**6.8**	**43**	**40**	**27**	**19**	**61**	**14**	**31**	**26**	**8.3**	**20**	**324**	**52**	**52**
SS29_2_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**1.2**	**1.1**	< 0.5	< 0.5	**1.9**	**0.7**	**0.9**	**0.8**	< 0.5	< 0.5	**6.6**	**1.2**	**1.5**
SS29_3_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	**1.7**	< 0.5	**5.2**	**5.1**	**2.3**	**1.5**	**7.7**	**2.9**	**4.0**	**2.5**	**0.8**	**1.8**	**36**	**6.3**	**6.3**
SS29_4_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SS29_5_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**1.4**	**1.3**	**0.6**	< 0.5	**1.9**	**0.9**	**1.1**	**0.6**	< 0.5	< 0.5	**7.8**	**1.4**	**1.7**
SS29_6_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	**1.5**	< 0.5	**4.5**	**4.2**	**1.9**	**1.2**	**6.2**	**2.7**	**3.3**	**2.1**	**0.6**	**1.4**	**30**	**5.2**	**5.2**
SW03_0.0-0.1	16-Dec-21	0.0		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**

	Polycyclic Aromatic Hydrocarbons																		
	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Chrysene	o[a]anthra	[b]fluorar	[k]fluorar	nzo[a]pyre	[1,2,3-c,d	z[a,h]anth	o[g,h,i]per	Total PAH	Benzo[a] pyrene TEQ (Zero)	Benzo[a] pyrene TEQ (Half LOR)
LOR	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	3.0	3.0
EIL	170	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lab report 854503 V2																			
S1	**2.3**	< 0.5	**14**	**5.0**	**57**	**8.7**	**120**	**120**	**79**	**70**	**80**	**71**	**89**	**54**	**18**	**100**	**888**	**140**	**140**
SS15_1_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	**1.0**	< 0.5	**3.1**	**2.9**	**1.3**	**0.8**	**3.9**	**1.6**	**2.0**	**1.1**	< 0.5	**0.8**	**19**	**2.8**	**3.0**
SS15_2_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	**2.1**	**0.6**	**6.2**	**5.8**	**3.0**	**1.9**	**8.1**	**3.8**	**4.8**	**2.2**	< 0.5	**1.5**	**40**	**6.4**	**6.7**
SS15_3_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	**0.9**	< 0.5	**3.0**	**2.8**	**1.1**	**0.7**	**3.1**	**1.6**	**2.0**	**1.1**	< 0.5	**0.7**	**17**	**2.7**	**2.9**
SS15_4_0.0-0.1	< 0.5	< 0.5	**1.3**	**0.5**	**8.3**	**2.4**	**26**	**23**	**10**	**6.2**	**29**	**13**	**17**	**8.4**	**2.1**	**5.2**	**152**	**25**	**25**
SS15_5_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	**1.3**	< 0.5	**5.0**	**4.6**	**2.1**	**1.3**	**7.1**	**2.5**	**3.6**	**2.1**	**0.7**	**1.4**	**32**	**5.6**	**5.6**
SS15_6_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	**0.9**	< 0.5	**3.2**	**2.9**	**1.2**	**0.8**	**4.1**	**1.8**	**2.2**	**1.2**	< 0.5	**0.9**	**19**	**3.0**	**3.3**
SS27_1_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SS27_2_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**1.5**	**1.5**	**0.7**	< 0.5	**2.3**	**0.9**	**1.2**	**1.0**	< 0.5	< 0.5	**9.1**	**1.6**	**1.9**
SS27_3_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SS27_4_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SS27_5_0.0-0.1	< 0.5	< 0.5	**0.7**	< 0.5	**5.2**	**1.2**	**14**	**13**	**6.4**	**4.2**	**18**	**6.5**	**10**	**6.4**	**1.8**	**4.6**	**92**	**15**	**15**
SS27_6_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SS29_1_0.0-0.1	< 0.5	< 0.5	**2.1**	**0.7**	**9.7**	**3.2**	**30**	**27**	**15**	**9.9**	**35**	**12**	**19**	**12**	< 0.5	**8.3**	**184**	**26**	**26**
SS29_2_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**1.2**	**1.1**	< 0.5	< 0.5	**1.9**	**0.7**	**0.9**	**0.8**	< 0.5	< 0.5	**6.6**	**1.2**	**1.5**
SS29_3_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	**1.7**	< 0.5	**5.2**	**5.1**	**2.3**	**1.5**	**7.7**	**2.9**	**4.0**	**2.5**	**0.8**	**1.8**	**36**	**6.3**	**6.3**
SS29_4_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**
SS29_5_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**1.4**	**1.3**	**0.6**	< 0.5	**1.9**	**0.9**	**1.1**	**0.6**	< 0.5	< 0.5	**7.8**	**1.4**	**1.7**
SS29_6_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	**1.5**	< 0.5	**4.5**	**4.2**	**1.9**	**1.2**	**6.2**	**2.7**	**3.3**	**2.1**	**0.6**	**1.4**	**30**	**5.2**	**5.2**
SW03_0.0-0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**

Notes:
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
mg/kg - Milligrams per kilogram
Bold indicates a detection above the laboratory limit of reporting
Highlighting indicates an exceedance of the corresponding criteria (highlighting corresponds to the guideline with the highest criteria value where analytical result exceeds more than one guideline)

Criteria:
National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).

Table 5
Soil Analytical Data - PCBs
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Polychlorinated Biphenyls							
			Aroclor-1260	Aroclor-1254	Aroclor-1221	Aroclor-1232	Aroclor-1248	Aroclor-1016	Aroclor-1242	Total PCBs
LOR			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL C - Recreational (NEPM 2013)			--	--	--	--	--	--	--	1.0
Sample Name	Sample Date	Start Depth (m)								
SS03	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
SS09	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
SS11	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
SS15	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
SS22	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
SS28	30-Oct-19	0.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
BS10_0.1	08-Apr-20	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
FB03_0.1	08-Apr-20	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
FB05_0.1	08-Apr-20	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
MY01_0.1	09-Apr-20	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PG02_0.1	09-Apr-20	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PV07_0.7	08-Apr-20	0.7	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Notes:
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
mg/kg - Milligrams per kilogram
PCB - Polychlorinated Biphenyl

Criteria:
National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).

Table 6
Soil Analytical Data - Pesticides
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Organochlorine P																
			2,4,5-T	2,4-Dichlorophenoxyacetic Acid	2-Methyl-4-Chlorophenoxy Butanoic Acid	4,4'-DDE	4,4'-DDD	4,4'-DDT	alpha-BHC	beta-BHC	gamma-BHC	delta-BHC	Aldrin	Heptachlor epoxide	cis-Chlordane	trans-Chlordane	Chlordane	alpha-Endosulfan	beta-Endosulfan	Endosulfan (sum)	Endosulfan sulfate
LOR			0.5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05	0.05	0.05	0.05
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL C - Recreational (NEPM 2013)			800	1,300	800	--	--	--	--	--	--	--	--	--	70	70	70	--	--	340	--
EIL - Urban Residential/Public Open Space (NEPM 2013)			--	--	--	--	--	180	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date	Start Depth (m)																			
SS03	30-Oct-19	0.0	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
SS09	30-Oct-19	0.0	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
SS11	30-Oct-19	0.0	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
SS15	30-Oct-19	0.0	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
SS22	30-Oct-19	0.0	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
SS28	30-Oct-19	0.0	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BS10_0.1	08-Apr-20	0.1	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.1	< 0.05	< 0.05	-	< 0.05
CG02_0.1	08-Apr-20	0.1	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.1	< 0.05	< 0.05	-	< 0.05
CG07_0.1	08-Apr-20	0.1	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.1	< 0.05	< 0.05	-	< 0.05
CG09_0.1	08-Apr-20	0.1	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.1	< 0.05	< 0.05	-	< 0.05
CG12_0.1	08-Apr-20	0.1	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.1	< 0.05	< 0.05	-	< 0.05
FB03_0.1	08-Apr-20	0.1	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.1	< 0.05	< 0.05	-	< 0.05
FB05_0.1	08-Apr-20	0.1	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.1	< 0.05	< 0.05	-	< 0.05
MY01_0.1	09-Apr-20	0.1	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.1	< 0.05	< 0.05	-	< 0.05
PG02_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	-	-	-	-	< 0.05	-	-	-	< 0.1	< 0.05	< 0.05	-	< 0.05
PV07_0.7	08-Apr-20	0.7	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.1	< 0.05	< 0.05	-	< 0.05

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
mg/kg - Milligrams per kilogram
DDT - Dichlorodiphenyltrichloroethane
2,4,5-T - 2,4,5-Trichlorophenoxyacetic acid
MCPA - 2-methyl-4-chlorophenoxyacetic acid
DDE - Dichlorodiphenyldichloroethylene
DDD - Dichlorodiphenyldichloroethane

Criteria:
National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).

Table 6
Soil Analytical Data - Pesticides
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			esticides																		
			Endrin	Endrin aldehyde	Endrin ketone	Dieldrin	Heptachlor	Hexachlorobenzene	Hexachlorocyclopentadiene	Hexachloroethane	MCPA	Mecoprop	Methoxychlor	Mirex	Oxychlordane	Picloram	Toxaphene	Sum of Aldrin + Dieldrin	Sum of DDD + DDE + DDT	Sum of other Organochlorine pesticides	Total Organochlorine Pesticides	Azinphos methyl
LOR			0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.5	0.5	0.05	0.01	0.05	0.5	1.0	0.05	0.05	0.1	0.1	0.2
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL C - Recreational (NEPM 2013)			20	--	--	--	10	10	--	--	800	--	400	20	--	5,700	30	10	400	--	--	--
EIL - Urban Residential/Public Open Space (NEPM 2013)			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date	Start Depth (m)																				
SS03	30-Oct-19	0.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.1	-	-	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	-	-	-
SS09	30-Oct-19	0.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.1	-	-	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	-	-	-
SS11	30-Oct-19	0.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.1	-	-	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	-	-	-
SS15	30-Oct-19	0.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.1	-	-	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	-	-	-
SS22	30-Oct-19	0.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.1	-	-	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	-	-	-
SS28	30-Oct-19	0.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.1	-	-	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	-	-	-
BS10_0.1	08-Apr-20	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	-	< 0.05	-	-	-	< 1.0	< 0.05	< 0.05	< 0.1	< 0.1	-
CG02_0.1	08-Apr-20	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	-	< 0.05	-	-	-	< 1.0	< 0.05	< 0.05	< 0.1	< 0.1	< 0.2
CG07_0.1	08-Apr-20	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	-	< 0.05	-	-	-	< 1.0	< 0.05	< 0.05	< 0.1	< 0.1	< 0.2
CG09_0.1	08-Apr-20	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	-	< 0.05	-	-	-	< 1.0	< 0.05	< 0.05	< 0.1	< 0.1	< 0.2
CG12_0.1	08-Apr-20	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	-	< 0.05	-	-	-	< 1.0	< 0.05	< 0.05	< 0.1	< 0.1	< 0.2
FB03_0.1	08-Apr-20	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	-	< 0.05	-	-	-	< 1.0	< 0.05	< 0.05	< 0.1	< 0.1	-
FB05_0.1	08-Apr-20	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	-	< 0.05	-	-	-	< 1.0	< 0.05	< 0.05	< 0.1	< 0.1	-
MY01_0.1	09-Apr-20	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	-	< 0.05	-	-	-	< 1.0	< 0.05	< 0.05	< 0.1	< 0.1	-
PG02_0.1	09-Apr-20	0.1	< 0.05	-	-	< 0.05	< 0.05	< 0.05	-	-	< 0.5	< 0.5	< 0.05	< 0.01	-	< 0.5	< 1.0	-	-	-	-	-
PV07_0.7	08-Apr-20	0.7	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	-	< 0.05	-	-	-	< 1.0	< 0.05	< 0.05	< 0.1	< 0.1	-

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
mg/kg - Milligrams per kilogram
DDT - Dichlorodiphenyltrichloroethane
2,4,5-T - 2,4,5-Trichlorophenoxyacetic acid
MCPA - 2-methyl-4-chlorophenoxyacetic acid
DDE - Dichlorodiphenyldichloroethylene
DDD - Dichlorodiphenyldichloroethane

Criteria:
National Environment Protection (Assessment of Site Contar

Table 6
Soil Analytical Data - Pesticides
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Organophosphorus Pesticides																			
			Bolstar	Chlorfenvinphos	Chlorpyriphos	Chlorpyriphos-methyl	Coumaphos	Demeton-S	Demeton-O	Disulfoton	Diazinon	Dichlorvos	Dimethoate	EPN	Ethion	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Mevinphos	Monocrotophos
LOR			0.2	0.2	0.2	0.2	2.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2.0
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL C - Recreational (NEPM 2013)			--	--	250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EIL - Urban Residential/Public Open Space (NEPM 2013)			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date	Start Depth (m)																					
SS03	30-Oct-19	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS09	30-Oct-19	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS11	30-Oct-19	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS15	30-Oct-19	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS22	30-Oct-19	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS28	30-Oct-19	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BS10_0.1	08-Apr-20	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CG02_0.1	08-Apr-20	0.1	< 0.2	< 0.2	< 0.2	< 0.2	< 2.0	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 2.0
CG07_0.1	08-Apr-20	0.1	< 0.2	< 0.2	< 0.2	< 0.2	< 2.0	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 2.0
CG09_0.1	08-Apr-20	0.1	< 0.2	< 0.2	< 0.2	< 0.2	< 2.0	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 2.0
CG12_0.1	08-Apr-20	0.1	< 0.2	< 0.2	< 0.2	< 0.2	< 2.0	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 2.0
FB03_0.1	08-Apr-20	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FB05_0.1	08-Apr-20	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MY01_0.1	09-Apr-20	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PG02_0.1	09-Apr-20	0.1	-	-	< 0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PV07_0.7	08-Apr-20	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
mg/kg - Milligrams per kilogram
DDT - Dichlorodiphenyltrichloroethane
2,4,5-T - 2,4,5-Trichlorophenoxyacetic acid
MCPA - 2-methyl-4-chlorophenoxyacetic acid
DDE - Dichlorodiphenyldichloroethylene
DDD - Dichlorodiphenyldichloroethane

Criteria:
National Environment Protection (Assessment of Site Contar

Table 6
Soil Analytical Data - Pesticides
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Omethoate	Parathion	Parathion-methyl	Phorate	Pirimiphos-methyl	Ronnel	Terbufos	Tetrachlorvinphos	Trichloronate	Atrazine	Bifenthrin	Naled	Pyrazophos	Tokuthion
LOR			2.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.05	0.2	0.2	0.2
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL C - Recreational (NEPM 2013)			--	--	--	--	--	--	--	--	--	400	730	--	--	--
EIL - Urban Residential/Public Open Space (NEPM 2013)			--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date	Start Depth (m)														
SS03	30-Oct-19	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS09	30-Oct-19	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS11	30-Oct-19	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS15	30-Oct-19	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS22	30-Oct-19	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS28	30-Oct-19	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BS10_0.1	08-Apr-20	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CG02_0.1	08-Apr-20	0.1	< 2.0	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	-	< 0.2	< 0.2	< 0.2
CG07_0.1	08-Apr-20	0.1	< 2.0	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	-	< 0.2	< 0.2	< 0.2
CG09_0.1	08-Apr-20	0.1	< 2.0	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	-	< 0.2	< 0.2	< 0.2
CG12_0.1	08-Apr-20	0.1	< 2.0	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	-	< 0.2	< 0.2	< 0.2
FB03_0.1	08-Apr-20	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FB05_0.1	08-Apr-20	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MY01_0.1	09-Apr-20	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PG02_0.1	09-Apr-20	0.1	-	-	-	-	-	-	-	-	-	< 0.2	< 0.05	-	-	-
PV07_0.7	08-Apr-20	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
mg/kg - Milligrams per kilogram
DDT - Dichlorodiphenyltrichloroethane
2,4,5-T - 2,4,5-Trichlorophenoxyacetic acid
MCPA - 2-methyl-4-chlorophenoxyacetic acid
DDE - Dichlorodiphenyldichloroethylene
DDD - Dichlorodiphenyldichloroethane

Criteria:
National Environment Protection (Assessment of Site Contar

Table 7
Soil Analytical Data - Phenols
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Phenolic Compounds (Non-Chlorinated)											Phenolic Compounds (Chlorinated)								
			Phenol	2-Methylphenol (o-Cresol)	3- & 4-Methylphenol (m&p cresol)	2-Nitrophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	4-Nitrophenol	Dinoseb	2-Cyclohexyl-4,6-dinitrophenol	4,6-Dinitro-2-methylphenol	Non-Halogenated Phenols (Sum of total)	2-Chlorophenol	4-Chloro-3-methylphenol	2,4-Dichlorophenol	2,6-Dichlorophenol	2,4,6-Trichlorophenol	2,4,5-Trichlorophenol	Tetrachlorophenols (Sum of total)	Pentachlorophenol	Halogenated Phenols (Sum of total)
LOR			0.5	0.2	0.4	1.0	0.5	5.0	5.0	20	20	5.0	20	0.5	1.0	0.5	0.5	1.0	1.0	10	1.0	1.0
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL C - Recreational (NEPM 2013)			40,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120	--
Sample Name	Sample Date	Start Depth (m)																				
SS03	30-Oct-19	0.0	< 0.5	-	-	< 0.5	< 0.5	< 30	< 0.5	< 10	< 30	< 10	< 30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
SS09	30-Oct-19	0.0	< 0.5	-	-	< 0.5	< 0.5	< 30	< 0.5	< 10	< 30	< 10	< 30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
SS11	30-Oct-19	0.0	< 0.5	-	-	< 0.5	< 0.5	< 30	< 0.5	< 10	< 30	< 10	< 30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
SS15	30-Oct-19	0.0	< 0.5	-	-	< 0.5	< 0.5	< 30	< 0.5	< 10	< 30	< 10	< 30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
SS22	30-Oct-19	0.0	< 0.5	-	-	< 0.5	< 0.5	< 30	< 0.5	< 10	< 30	< 10	< 30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
SS28	30-Oct-19	0.0	< 0.5	-	-	< 0.5	< 0.5	< 30	< 0.5	< 10	< 30	< 10	< 30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BS10_0.1	08-Apr-20	0.1	< 0.5	< 0.2	< 0.4	< 1.0	< 0.5	< 5.0	< 5.0	< 20	< 20	< 5.0	< 20	< 0.5	< 1.0	< 0.5	< 0.5	< 1.0	< 1.0	< 10	< 1.0	< 1.0
FB03_0.1	08-Apr-20	0.1	< 0.5	< 0.2	< 0.4	< 1.0	< 0.5	< 5.0	< 5.0	< 20	< 20	< 5.0	< 20	< 0.5	< 1.0	< 0.5	< 0.5	< 1.0	< 1.0	< 10	< 1.0	< 1.0
FB05_0.1	08-Apr-20	0.1	< 0.5	< 0.2	< 0.4	< 1.0	< 0.5	< 5.0	< 5.0	< 20	< 20	< 5.0	< 20	< 0.5	< 1.0	< 0.5	< 0.5	< 1.0	< 1.0	< 10	< 1.0	< 1.0
MY01_0.1	09-Apr-20	0.1	< 0.5	< 0.2	< 0.4	< 1.0	< 0.5	< 5.0	< 5.0	< 20	< 20	< 5.0	< 20	< 0.5	< 1.0	< 0.5	< 0.5	< 1.0	< 1.0	< 10	< 1.0	< 1.0
PG02_0.1	09-Apr-20	0.1	< 0.5	< 0.2	< 0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 1.0	-
PV07_0.7	08-Apr-20	0.7	< 0.5	< 0.2	< 0.4	< 1.0	< 0.5	< 5.0	< 5.0	< 20	< 20	< 5.0	< 20	< 0.5	< 1.0	< 0.5	< 0.5	< 1.0	< 1.0	< 10	< 1.0	< 1.0

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
mg/kg - Milligrams per kilogram

Criteria:
National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).

Table 8
Soil Analytical Data - VOCs
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Halogenated Aliphatic Compounds												Volatile Halogenated Compounds	Halogenated Aliphatic Compou			
			1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2-Dibromo-3-chloropropane	1,2-Dichloroethane	1,2,3-Trichloropropane	1,3-Dichloropropane	Bromomethane	Bromochloromethane	Carbon tetrachloride	Chloroethane	Chloromethane	cis-1,2-Dichloroethene	Dibromomethane
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Name	Sample Date	Start Depth (m)																		
SS03	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	-	< 0.5	< 0.5
SS09	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	-	< 0.5	< 0.5
SS11	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	-	< 0.5	< 0.5
SS15	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	-	< 0.5	< 0.5
SS22	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	-	< 0.5	< 0.5
SS28	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	-	< 0.5	< 0.5
BS10_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
FB03_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
FB05_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
MY01_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
PV07_0.7	08-Apr-20	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
mg/kg - Milligrams per kilogram

Table 8
Soil Analytical Data - VOCs
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			nds		Volatile Halogenated Compounds	Halogenated Aliphatic Compounds	Volatile Halogenated Compounds	Halogenated Aliphatic Compounds	Volatile Halogenated Compounds	Halogenated Aliphatic Compounds	Volatile Halogenated Compounds	Chlorinated MAHs						
			Dichlorodifluoromethane	Dichloromethane	Hexachlorobutadiene	Iodomethane	Tetrachloroethene	trans-1,2-Dichloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	1,2,4-Trichlorobenzene	1,2,3,5-Tetrachlorobenzene	1,2,3-Trichlorobenzene	1,2,4,5-Tetrachlorobenzene	1,3,5-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Name	Sample Date	Start Depth (m)																
SS03	30-Oct-19	0.0	-	< 1.0	< 0.1	-	< 0.5	< 0.5	< 0.5	< 2.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
SS09	30-Oct-19	0.0	-	< 1.0	< 0.1	-	< 0.5	< 0.5	< 0.5	< 2.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
SS11	30-Oct-19	0.0	-	< 1.0	< 0.1	-	< 0.5	< 0.5	< 0.5	< 2.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
SS15	30-Oct-19	0.0	-	< 1.0	< 0.1	-	< 0.5	< 0.5	< 0.5	< 2.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
SS22	30-Oct-19	0.0	-	< 1.0	< 0.1	-	< 0.5	< 0.5	< 0.5	< 2.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
SS28	30-Oct-19	0.0	-	< 1.0	< 0.1	-	< 0.5	< 0.5	< 0.5	< 2.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
BS10_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5
FB03_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5
FB05_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5
MY01_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5
PV07_0.7	08-Apr-20	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5

Notes:
- - Not analysed
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LOR - Laboratory limit of reporting
mg/kg - Milligrams per kilogram

Table 8
Soil Analytical Data - VOCs
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte								Volatile Halogenated Compounds	Chlorinated MAHs				Monocyclic Aromatic Hydrocarbons			Monocyclic Aromatic Hydrocarbons (MAH)	Monocyclic Aromatic Hydrocarbons		Volatile Halogenated Compounds
			1,4-Dichlorobenzene	2-Chlorotoluene	4-Chlorotoluene	Benzyl chloride	Bromobenzene	Chlorobenzene	Pentachlorobenzene	1,2,3,4-Tetrachlorobenzene	Benzal chloride	Benzotrichloride	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Isopropylbenzene	Styrene	Sum of monocyclic aromatic hydrocarbons	Sum of other chlorinated hydrocarbons	Sum of volatile chlorinated hydrocarbons
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Name	Sample Date	Start Depth (m)																	
SS03	30-Oct-19	0.0	< 0.1	< 0.5	< 0.5	< 0.1	< 0.5	< 0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.5	-	< 0.5	< 0.5	-	-	-
SS09	30-Oct-19	0.0	< 0.1	< 0.5	< 0.5	< 0.1	< 0.5	< 0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.5	-	< 0.5	< 0.5	-	-	-
SS11	30-Oct-19	0.0	< 0.1	< 0.5	< 0.5	< 0.1	< 0.5	< 0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.5	-	< 0.5	< 0.5	-	-	-
SS15	30-Oct-19	0.0	< 0.1	< 0.5	< 0.5	< 0.1	< 0.5	< 0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.5	-	< 0.5	< 0.5	-	-	-
SS22	30-Oct-19	0.0	< 0.1	< 0.5	< 0.5	< 0.1	< 0.5	< 0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.5	-	< 0.5	< 0.5	-	-	-
SS28	30-Oct-19	0.0	< 0.1	< 0.5	< 0.5	< 0.1	< 0.5	< 0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.5	-	< 0.5	< 0.5	-	-	-
BS10_0.1	08-Apr-20	0.1	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
FB03_0.1	08-Apr-20	0.1	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
FB05_0.1	08-Apr-20	0.1	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
MY01_0.1	09-Apr-20	0.1	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
PV07_0.7	08-Apr-20	0.7	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
mg/kg - Milligrams per kilogram

Table 8
Soil Analytical Data - VOCs
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Trihalomethanes		Volatile Halogenated Compounds	Trihalomethanes	Solvents		Fumigants							
			Bromodichloromethane	Bromoform	Chloroform	Dibromochloromethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Acetone	Allyl chloride	1,2-Dibromoethane	1,2-Dichloropropane	2,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Carbon disulfide
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Name	Sample Date	Start Depth (m)														
SS03	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
SS09	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
SS11	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
SS15	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
SS22	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
SS28	30-Oct-19	0.0	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
BS10_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
FB03_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
FB05_0.1	08-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
MY01_0.1	09-Apr-20	0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
PV07_0.7	08-Apr-20	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
mg/kg - Milligrams per kilogram

Table 9
Quality Control Sample Analysis - Metals
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Metals							
			Arsenic	Cadmium	Chromium	Copper	Iron	Lead	Nickel	Zinc
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Name	Sample Date	Sample Type								
OG36_0.6_06042020	06-Apr-20	Primary	5.1	< 0.4	27	12	-	33	11	23
QC01_06042020	06-Apr-20	Duplicate	5.0	< 0.4	33	12	-	31	14	29
Relative Percentage Difference			2%	NC	20%	0%	NC	6%	24%	23%
OG36_0.6_06042020	06-Apr-20	Primary	5.1	< 0.4	27	12	-	33	11	23
QC02_06042020	06-Apr-20	Triplicate	10	< 1.0	27	11	-	46	12	18
Relative Percentage Difference			**65%**	NC	0%	9%	NC	33%	9%	24%
OG04_0.1_06042020	06-Apr-20	Primary	4.2	< 0.4	26	14	-	130	11	22
QC03_06042020	06-Apr-20	Duplicate	3.7	< 0.4	30	14	-	83	13	26
Relative Percentage Difference			13%	NC	14%	0%	NC	44%	17%	17%
OG04_0.1_06042020	06-Apr-20	Primary	4.2	< 0.4	26	14	-	130	11	22
QC04_06042020	06-Apr-20	Triplicate	6.0	< 1.0	26	14	-	56	11	19
Relative Percentage Difference			35%	NC	0%	0%	NC	**80%**	0%	15%
OG26_0.1_07042020	07-Apr-20	Primary	4.5	< 0.4	20	7.5	-	42	10	42
QC08_07042020	07-Apr-20	Duplicate	4.0	< 0.4	21	7.4	-	98	11	47
Relative Percentage Difference			12%	NC	5%	1%	NC	**80%**	10%	11%
OG26_0.1_07042020	07-Apr-20	Primary	4.5	< 0.4	20	7.5	-	42	10	42
QC09_07042020	07-Apr-20	Triplicate	5.0	< 1.0	18	7.0	-	45	10	38
Relative Percentage Difference			11%	NC	11%	7%	NC	7%	0%	10%
OG20_0.4_07042020	07-Apr-20	Primary	6.8	< 0.4	47	12	-	50	14	20
QC10_07042020	07-Apr-20	Duplicate	5.8	< 0.4	40	12	-	72	15	20
Relative Percentage Difference			16%	NC	16%	0%	NC	36%	7%	0%
OG20_0.4_07042020	07-Apr-20	Primary	6.8	< 0.4	47	12	-	50	14	20
QC11_07042020	07-Apr-20	Triplicate	6.0	< 1.0	34	11	-	49	13	14
Relative Percentage Difference			13%	NC	32%	9%	NC	2%	7%	35%
CG03_0.1_08042020	08-Apr-20	Primary	< 2.0	< 0.4	14	< 5.0	-	9.4	< 5.0	15
QC15_08042020	08-Apr-20	Duplicate	< 2.0	< 0.4	13	< 5.0	-	10	< 5.0	14
Relative Percentage Difference			NC	NC	7%	NC	NC	6%	NC	7%
CG03_0.1_08042020	08-Apr-20	Primary	< 2.0	< 0.4	14	< 5.0	-	9.4	< 5.0	15
QC16_08042020	08-Apr-20	Triplicate	< 5.0	< 1.0	14	< 5.0	-	9.0	4.0	11
Relative Percentage Difference			NC	NC	0%	NC	NC	4%	22%	31%
CG02_0.5_08042020	08-Apr-20	Primary	3.4	< 0.4	36	16	-	21	29	42
QC17_08042020	08-Apr-20	Duplicate	3.0	< 0.4	34	14	-	19	31	36
Relative Percentage Difference			13%	NC	6%	13%	NC	10%	7%	15%
CG02_0.5_08042020	08-Apr-20	Primary	3.4	< 0.4	36	16	-	21	29	42
QC18_08042020	08-Apr-20	Triplicate	< 5.0	< 1.0	30	14	-	21	22	24
Relative Percentage Difference			38%	NC	18%	13%	NC	0%	27%	**55%**
PG01_0.1_09042020	09-Apr-20	Primary	5.7	< 0.4	35	13	-	17	25	46
QC23_09042020	09-Apr-20	Duplicate	8.3	< 0.4	62	13	-	18	26	43
Relative Percentage Difference			37%	NC	**56%**	0%	NC	6%	4%	7%
PG01_0.1_09042020	09-Apr-20	Primary	5.7	< 0.4	35	13	-	17	25	46
QC24_09042020	09-Apr-20	Triplicate	10	< 1.0	35	10	-	17	19	38
Relative Percentage Difference			**55%**	NC	0%	26%	NC	0%	27%	19%
OG53_0.1_09042020	09-Apr-20	Primary	12	< 0.4	37	13	23,000	81	18	27
QC25_09042020	09-Apr-20	Duplicate	4.5	< 0.4	26	13	-	21	13	21
Relative Percentage Difference			**91%**	NC	35%	0%	NC	**118%**	32%	25%
OG53_0.1_09042020	09-Apr-20	Primary	12	< 0.4	37	13	23,000	81	18	27
QC26_09042020	09-Apr-20	Triplicate	6.0	< 1.0	33	13	-	24	16	24
Relative Percentage Difference			**67%**	NC	11%	0%	NC	**109%**	12%	12%
SD01_09042020	09-Apr-20	Primary	7.8	< 0.4	17	10	-	16	11	39
QC27_09042020	09-Apr-20	Duplicate	3.6	< 0.4	11	< 5.0	-	12	7.5	24
Relative Percentage Difference			**74%**	NC	43%	**67%**	NC	29%	38%	48%
SD01_09042020	09-Apr-20	Primary	7.8	< 0.4	17	10	-	16	11	39
QC28_09042020	09-Apr-20	Triplicate	35	< 1.0	14	6.0	-	14	12	65
Relative Percentage Difference			**127%**	NC	19%	50%	NC	13%	9%	50%

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
NC - Not calculated
mg/kg - Milligrams per kilogram
RPD - Relative Percentage Difference

Criteria:

Table 9A
Quality Control Sample Analysis - Metals
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Metals
			Lead
Units			mg/kg
Sample Name	Sample Date	Sample Type	
SB07_0.1_05012021	05-Jan-21	Primary	35
QC01_0.1_05012021	05-Jan-21	Duplicate	34
Relative Percentage Difference			3%
SB07_0.1_05012021	05-Jan-21	Primary	35
QC02_0.1_05012021	05-Jan-21	Triplicate	32
Relative Percentage Difference			9%

Notes:
mg/kg - Milligrams per kilogram

Table 10
Quality Control Sample Analysis - PAHs
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Polycyclic Aromatic Hydrocarbons													Polycyclic Aromatic Hydrocarbons							
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Chrysene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo(b+j)fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-c,d]pyrene	Dibenz[a,h]anthracene	Benzo[g,h,i]perylene	Total PAH	Benzo[a]pyrene TEQ (Zero)	Benzo[a]pyrene TEQ (LOR)	Benzo[a]pyrene TEQ (Half LOR)
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Name	Sample Date	Sample Type																					
OG36_0.6_06042020	06-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC01_06042020	06-Apr-20	Duplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%
OG36_0.6_06042020	06-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC02_06042020	06-Apr-20	Triplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%
OG04_0.1_06042020	06-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.3	1.3	0.8	0.7	0.7	0.9	-	1.1	< 0.5	< 0.5	< 0.5	6.8	1.3	-	1.6
QC03_06042020	06-Apr-20	Duplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	**89%**	**89%**	46%	33%	33%	**57%**	NC	**75%**	NC	NC	NC	**173%**	**89%**	NC	**91%**
OG04_0.1_06042020	06-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.3	1.3	0.8	0.7	0.7	0.9	-	1.1	< 0.5	< 0.5	< 0.5	6.8	1.3	-	1.6
QC04_06042020	06-Apr-20	Triplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	**89%**	**89%**	46%	33%	NC	**57%**	NC	**75%**	NC	NC	NC	**173%**	**89%**	NC	**91%**
OG26_0.1_07042020	07-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.7	1.5	1.4	0.9	1.1	1.2	-	1.4	1.0	0.5	1.1	12	2.3	-	2.3
QC08_07042020	07-Apr-20	Duplicate	< 0.5	< 0.5	1.0	< 0.5	7.1	1.4	25	23	15	11	12	11	-	13	9.2	2.2	8.4	139	20	-	20
Relative Percentage Difference			NC	NC	**67%**	NC	**174%**	**95%**	**175%**	**176%**	**166%**	**170%**	**166%**	**161%**	NC	**161%**	**161%**	**126%**	**154%**	**169%**	**159%**	NC	**159%**
OG26_0.1_07042020	07-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.7	1.5	1.4	0.9	1.1	1.2	-	1.4	1.0	0.5	1.1	12	2.3	-	2.3
QC09_07042020	07-Apr-20	Triplicate	< 0.5	< 0.5	< 0.5	< 0.5	1.6	< 0.5	4.5	4.3	3.6	3.2	-	2.0	6.8	5.1	2.9	0.9	3.6	39	7.6	7.6	7.6
Relative Percentage Difference			NC	NC	NC	NC	**105%**	NC	**90%**	**97%**	**88%**	**112%**	NC	50%	NC	**114%**	**97%**	**57%**	**106%**	**106%**	**107%**	NC	**107%**
OG20_0.4_07042020	07-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC10_07042020	07-Apr-20	Duplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%
OG20_0.4_07042020	07-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC11_07042020	07-Apr-20	Triplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%
CG03_0.1_08042020	08-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC15_08042020	08-Apr-20	Duplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%
CG03_0.1_08042020	08-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC16_08042020	08-Apr-20	Triplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%
CG02_0.5_08042020	08-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC17_08042020	08-Apr-20	Duplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%
CG02_0.5_08042020	08-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC18_08042020	08-Apr-20	Triplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%
PG01_0.1_09042020	09-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC23_09042020	09-Apr-20	Duplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%
PG01_0.1_09042020	09-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC24_09042020	09-Apr-20	Triplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%
OG53_0.1_09042020	09-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC25_09042020	09-Apr-20	Duplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	0.7	0.5	0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	2.4	< 0.5	-	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	33%	33%	0%	0%	NC	NC	NC	NC	NC	NC	NC	**131%**	NC	NC	0%
OG53_0.1_09042020	09-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC26_09042020	09-Apr-20	Triplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%
SD01_09042020	09-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC27_09042020	09-Apr-20	Duplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%
SD01_09042020	09-Apr-20	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC28_09042020	09-Apr-20	Triplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
NC - Not calculated
mg/kg - Milligrams per kilogram
RPD - Relative Percentage Difference

Criteria:

Table 10A
Quality Control Sample Analysis - PAHs
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Polycyclic Aromatic Hydrocarbons																			
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Chrysene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[b] & Benzo[j]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-c,d]pyrene	Dibenz[a,h]anthracene	Benzo[g,h,i]perylene	Total PAH	Benzo[a]pyrene TEQ (Zero)	Benzo[a]pyrene TEQ (LOR)	Benzo[a]pyrene TEQ (Half LOR)
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Name	Sample Date	Sample Type																					
SB07_0.1_05012021	05-Jan-21	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC01_0.1_05012021	05-Jan-21	Duplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%
SB07_0.1_05012021	05-Jan-21	Primary	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	0.6
QC02_0.1_05012021	05-Jan-21	Triplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	0.6
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0%

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
NC - Not calculated
mg/kg - Milligrams per kilogram

Table 10B
Quality Control Sample Analysis - PAHs
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Polycyclic Aromatic Hydrocarbons																			
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Chrysene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[b] & Benzo[j]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-c,d]pyrene	Dibenz[a,h]anthracene	Benzo[g,h,i]perylene	Total PAH	Benzo[a]pyrene TEQ (Zero)	Benzo[a]pyrene TEQ (LOR)	Benzo[a]pyrene TEQ (Half LOR)
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Name	Sample Date	Sample Type																					
SS15_2_0.0-0.1_16122021	16-Dec-21	Primary	< 0.5	< 0.5	< 0.5	< 0.5	2.1	0.6	6.2	5.8	3.0	1.9	8.1	3.8	-	4.8	2.2	< 0.5	1.5	40	6.4	-	6.7
QC01_16122021	16-Dec-21	Duplicate	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	2.5	2.3	1.0	0.6	2.8	1.3	-	1.5	0.7	< 0.5	< 0.5	13	2.1	-	2.3
Relative Percentage Difference			NC	NC	NC	NC	**100%**	18%	**85%**	**86%**	**100%**	**104%**	**97%**	**98%**	NC	**105%**	**103%**	NC	**100%**	**100%**	**101%**	NC	**98%**
SS15_2_0.0-0.1_16122021	16-Dec-21	Primary	< 0.5	< 0.5	< 0.5	< 0.5	2.1	0.6	6.2	5.8	3.0	1.9	8.1	3.8	-	4.8	2.2	< 0.5	1.5	40	6.4	-	6.7
QC02_16122021	16-Dec-21	Triplicate	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	0.6
Relative Percentage Difference			NC	NC	NC	NC	**123%**	18%	**170%**	**168%**	**143%**	**117%**	NC	**153%**	NC	**162%**	**126%**	NC	**100%**	**195%**	**171%**	NC	**167%**

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
NC - Not calculated
mg/kg - Milligrams per kilogram
RPD - Relative Percentage Difference

Table 11
Quality Control Sample Analysis - BTEXN, TRH
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			BTEXN							Total Petroleum Hydrocarbons	Total Recoverable Hydrocarbons	
			Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Naphthalene	C_6 - C_9	C_6 - C_{10}	C_6 - C_{10} minus BTEX (F1)
Units			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sample Name	Sample Date	Sample Type										
QC20_06042020	06-Apr-20	Trip Blank	< 0.001	< 0.001	< 0.001	< 0.002	< 0.001	< 0.003	< 0.01	< 0.02	< 0.02	< 0.02
QC30_09042020	09-Apr-20	Trip Blank	< 0.001	< 0.001	< 0.001	< 0.002	< 0.001	< 0.003	< 0.01	< 0.02	< 0.02	< 0.02

Notes:
< - Less than laboratory limit of reporting
mg/L - Milligrams per litre
BTEXN - Benzene, toluene, ethylbenzene, total xylenes, naphthalene

Table 12
Quality Control Sample Analysis - Metals
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Metals						
			Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc
Units			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sample Name	Sample Date	Sample Type							
QC07_06042020	06-Apr-20	Rinsate	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005
QC19_06042020	06-Apr-20	Rinsate	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005
QC14_07042020	07-Apr-20	Rinsate	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005
QC29_09042020	09-Apr-20	Rinsate	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005

Notes:
< - Less than laboratory limit of reporting
mg/L - Milligrams per litre

Table 13
Quality Control Sample Analysis - PAHs
Glenlyon Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Polycyclic Aromatic Hydrocarbons																
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Chrysene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-c,d]pyrene	Dibenz[a,h]anthracene	Benzo[g,h,i]perylene	Total PAH
Units			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sample Name	Sample Date	Sample Type																	
QC07_06042020	06-Apr-20	Rinsate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
QC19_06042020	06-Apr-20	Rinsate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
QC14_07042020	07-Apr-20	Rinsate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
QC29_09042020	09-Apr-20	Rinsate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

Notes:
< - Less than laboratory limit of reporting
mg/L - Milligrams per litre

Table 3
Quality Control Sample Analysis - PAHs
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Polycyclic Aromatic Hydrocarbons															
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Chrysene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-c,d]pyrene	Dibenz[a,h]anthracene	Benzo[g,h,i]perylene	Total PAH
Units			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sample Name	Sample Date	Sample Type																	
QC05_16122021	16-Dec-21	Rinsate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

Notes:
< - Less than laboratory limit of reporting
mg/L - Milligrams per litre

Table 14
Surface Water Analytical Data - Inorganics
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Anions and Cations													Alkalinity				Inorganics	
			Sodium	Calcium	Magnesium	Potassium	Sulphate	Chloride	Total Phosphorus	Nitrite as N	Nitrate as N	Ammonia as N	Total Nitrogen as N	Total Kjeldahl Nitrogen as N	Nitrogen	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Alkalinity as CaCO3	Total Dissolved Solids	Total Suspended Solids
LOR			0.5	0.5	0.5	0.5	5.0	1.0	0.01	0.02	0.02	0.01	0.05	0.2	0.2	20	10	20	20	10	1.0
Units			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Water Dependent Ecosystems and species - 95% Freshwater			--	--	--	--	--	--	--	--	--	0.9	--	--	--	--	--	--	--	--	--
Drinking Water - Health (NHRMC 2016)			--	--	--	--	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Stock Watering (ANZECC 2000)			--	--	--	--	1,000	--	--	--	400	--	--	--	--	--	--	--	--	2,500	--
Risks in Recreational Water X10 (NHMRC 2008)			--	--	--	--	5,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date	SWL (mBTOC)																			
DAM	09-Apr-20	-	**13**	**7.6**	**6.5**	**0.6**	< 5.0	**17**	**0.02**	< 0.02	< 0.02	**0.08**	< 0.05	**0.3**	**0.3**	**81**	< 10	< 20	**81**	**230**	**-**
SW01	09-Apr-20	-	**14**	**3.9**	**3.8**	**1.2**	< 5.0	**20**	**0.01**	< 0.02	< 0.02	**0.01**	< 0.05	**1.3**	**1.3**	**51**	< 10	< 20	**51**	**200**	**12**
SW02	09-Apr-20	-	**14**	**4.0**	**3.8**	**1.2**	< 5.0	**55**	**0.02**	< 0.02	< 0.02	< 0.01	< 0.05	**0.3**	**0.3**	**54**	< 10	< 20	**54**	**150**	**15**
SW01_1	16-Dec-21	-	**12**	**3.8**	**4.6**	**1.0**	< 5.0	**13**	**0.01**	< 0.02	**0.23**	< 0.01	**0.23**	**0.9**	**1.13**	**50**	< 10	**-**	**-**	**91**	**-**
SW01_2	16-Dec-21	-	**12**	**3.8**	**4.7**	**1.0**	< 5.0	**13**	**0.01**	< 0.02	**0.23**	**0.02**	**0.23**	**0.4**	**0.63**	**47**	< 10	**-**	**-**	**150**	**-**
SW02	16-Dec-21	-	**12**	**3.8**	**4.6**	**1.0**	< 5.0	**13**	**0.01**	< 0.02	**0.24**	**0.04**	**0.24**	< 0.2	**0.24**	**51**	< 10	**-**	**-**	**120**	**-**
SW03	16-Dec-21	-	**77**	**25**	**26**	**1.7**	< 5.0	**46**	**0.13**	< 0.02	< 0.02	**0.1**	< 0.05	**3.4**	**3.4**	**320**	**13**	**-**	**-**	**390**	**-**
SW04	16-Dec-21	-	**150**	**54**	**78**	**2.6**	< 5.0	**61**	**0.01**	< 0.02	< 0.02	**0.05**	< 0.05	< 0.2	< 0.2	**790**	**55**	**-**	**-**	**850**	**-**
SW05	16-Dec-21	-	**12**	**3.9**	**4.8**	**1.1**	< 5.0	**13**	**0.03 ***	< 0.02	**0.24**	**0.02**	**0.24**	**0.8 ***	**1.04 ***	**51**	< 10	**-**	**-**	**61**	**-**

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
mg/L - Milligrams per litre
Bold indicates a detection above the laboratory limit of reporting

Criteria:
Water Quality Australia - Low Reliability Trigger Values (for toluene and ethylbenzene) for Freshwater (Water Quality Guidelines 2018).
National Health and Medical Research Council (NHMRC) - National Water Quality Management Strategy: Australian Drinking Water Guidelines (2016).
Australian and New Zealand Environment and Conservation Council (ANZECC) - Australian and New Zealand Guidelines for Freshwater and Stock Watering Quality, and Irrigation Trigger Value for long term use (LTV) (2000).
National Health and Medical Research Council (NHMRC) - Guidelines for Managing Risks in Recreational Water (multiplication factor of 10 applied) (2008).

Table 15
Surface Water Analytical Data - Metals
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Metals						
			Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc
LOR			0.001	0.0002	0.001	0.001	0.001	0.001	0.005
Units			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Water Dependent Ecosystems and species - 95% Freshwater			0.024	0.0002	--	0.0014	0.0034	0.011	0.008
Drinking Water - Health (NHRMC 2016)			0.01	0.002	--	2.0	0.01	0.02	--
Irrigation (LTV) (ANZECC 2000)			0.1	0.01	0.1	0.2	2.0	0.2	2.0
Stock Watering (ANZECC 2000)			0.5	0.01	1.0	1.0	0.1	1.0	20
Risks in Recreational Water X10 (NHMRC 2008)			0.1	0.02	--	20	0.1	0.2	--
Sample Name	Sample Date	SWL (mBTOC)							
DAM	09-Apr-20	-	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005
SW01	09-Apr-20	-	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005
SW02	09-Apr-20	-	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005
SW01_1	16-Dec-21	-	< 0.001	< 0.0002	< 0.001	**0.001**	< 0.001	< 0.001	< 0.005
SW01_2	16-Dec-21	-	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005
SW02	16-Dec-21	-	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005
SW03	16-Dec-21	-	**0.004**	< 0.0002	**0.001**	**0.005**	**0.003**	**0.004**	**0.006**
SW04	16-Dec-21	-	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	**0.002**	< 0.005
SW05	16-Dec-21	-	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
mg/L - Milligrams per litre

Criteria:
Water Quality Australia - Low Reliability Trigger Values (for toluene and ethylbenzene) for Freshwater (Water Quality Guidelines 2018).
National Health and Medical Research Council (NHMRC) - National Water Quality Management Strategy: Australian Drinking Water Guidelines (2016).
Australian and New Zealand Environment and Conservation Council (ANZECC) - Australian and New Zealand Guidelines for Freshwater and Stock Watering Quality, and Irrigation Trigger Value for long term use (LTV) (2000
National Health and Medical Research Council (NHMRC) - Guidelines for Managing Risks in Recreational Water (multiplication factor of 10 applied) (2008).

Table 16
Surface Water Analytical Data - PAHs
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Polycyclic Aromatic Hydrocarbons																
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Chrysene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-c,d]pyrene	Dibenz[a,h]anthracene	Benzo[g,h,i]perylene	Total PAH
LOR			0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Units			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Water Dependent Ecosystems and species - 95% Freshwater			0.016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Drinking Water - Health (NHRMC 2016)			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00001
Stock Watering (ANZECC 2000)			--	--	--	--	--	--	--	--	--	--	--	--	0.00001	--	--	--	--
Risks in Recreational Water X10 (NHMRC 2008)			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0001
Sample Name	Sample Date	SWL (mBTOC)																	
SW01	09-Apr-20	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
SW02	09-Apr-20	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
SW01_1	16-Dec-21	-	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
SW01_2	16-Dec-21	-	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
SW02	16-Dec-21	-	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
SW03	16-Dec-21	-	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
SW04	16-Dec-21	-	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
SW05	16-Dec-21	-	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
mg/L - Milligrams per litre

Criteria:
Water Quality Australia - Low Reliability Trigger Values (for toluene and ethylbenzene) for Freshwater (Water Quality Guidelines 2018).
National Health and Medical Research Council (NHMRC) - National Water Quality Management Strategy: Australian Drinking Water Guidelines (2016).
Australian and New Zealand Environment and Conservation Council (ANZECC) - Australian and New Zealand Guidelines for Freshwater and Stock Watering Quality, and Irrigation Trigger Value for long term use (LTV) (2000).
National Health and Medical Research Council (NHMRC) - Guidelines for Managing Risks in Recreational Water (multiplication factor of 10 applied) (2008).

Table 17
Quality Control Sample Analysis - BTEXN, TRH
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			BTEXN							Total Petroleum Hydrocarbons	Total Recoverable Hydrocarbons	
			Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Naphthalene	C_6 - C_9	C_6 - C_{10}	C_6 - C_{10} minus BTEX (F1)
Units			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sample Name	Sample Date	Sample Type										
QC30_09042020	09-Apr-20	Trip Blank	< 0.001	< 0.001	< 0.001	< 0.002	< 0.001	< 0.003	< 0.01	< 0.02	< 0.02	< 0.02

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
NC - Not calculated
mg/L - Milligrams per litre
BTEXN - Benzene, toluene, ethylbenzene, total xylenes, naphthalene

Table 18
Quality Control Sample Analysis - Inorganics
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Anions and Cations												Alkalinity		Inorganics
			Sodium	Calcium	Magnesium	Potassium	Sulphate	Chloride	Phosphorus	Nitrite as N	Nitrate as N	Ammonia as N	Total Nitrogen as N	Total Kjeldahl Nitrogen as N	Nitrogen	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Total Dissolved Solids
Units			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sample Name	Sample Date	Sample Type																
SW05_16122021	16-Dec-21	Primary	12	3.9	4.8	1.1	< 5.0	13	0.01	< 0.02	0.24	0.02	0.24	< 0.2	0.24	51	< 10	61
QC01_16122021	16-Dec-21	Duplicate	13	3.9	4.9	1.0	< 5.0	13	0.03	< 0.02	0.23	0.03	0.24	0.8	1.04	52	< 10	37
Relative Percentage Difference			8%	0%	2%	10%	NC	0%	**100%**	NC	4%	40%	0%	**120%**	**125%**	2%	NC	49%

Notes:
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
NC - Not calculated
mg/L - Milligrams per litre
RPD - Relative Percentage Difference

Table 19
Quality Control Sample Analysis - Metals
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Metals						
			Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc
Units			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sample Name	Sample Date	Sample Type							
SW05_16122021	16-Dec-21	Primary	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005
QC01_16122021	16-Dec-21	Duplicate	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC
SW05_16122021	16-Dec-21	Primary	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005
QC02_16122021	16-Dec-21	Triplicate	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC
SW05_16122021	16-Dec-21	Primary	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005
QC02_16122021_2	16-Dec-21	Triplicate	< 0.001	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC

Notes:
< - Less than laboratory limit of reporting
NC - Not calculated
mg/L - Milligrams per litre

Table 20
Quality Control Sample Analysis - PAHs
Glenlyon Recreation Reserve
Suttons Lane
Glenlyon, Victoria

Analyte			Polycyclic Aromatic Hydrocarbons																
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Chrysene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-c,d]pyrene	Dibenz[a,h]anthracene	Benzo[g,h,i]perylene	Total PAH
Units			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sample Name	Sample Date	Sample Type																	
RINSATE_16122021	16-Dec-21	Rinsate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
SW05_16122021	16-Dec-21	Primary	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
QC01_16122021	16-Dec-21	Duplicate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
SW05_16122021	16-Dec-21	Primary	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
QC02_16122021	16-Dec-21	Triplicate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
SW05_16122021	16-Dec-21	Primary	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
QC02_16122021_2	16-Dec-21	Triplicate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	-	< 0.001	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.0005
Relative Percentage Difference			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
NC - Not calculated
µg/L - Micrograms per litre
mg/L - Milligrams per litre

APPENDIX A: FIELD LOGS

KLEINFELDER
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~~BAILER PURGING AND SAMPLING LOG~~ Surface Water

Project Number:	Site Name:	Site Address:
	Glenlyon Recreational Reserve	Glenlyon Rec Reserve

Sample Bottles Collected:
~~PARTY~~ 1x Orange, 1x Green, 1x Metal, 1x Purple

Well ID:	Date:	Field Manager:	Weather Observations:
—	16.12.21	MK	Overcast

QA/QC Samples Collected:

Well Diameter (mm):	Pre Purging Depth To Water (mBTOC):	Post Purging Depth to Water (mBTOC):
—	—	—

Surface Water.

(— TD (m) - — DTW (m)) x 5 = — L (1 BV)

Minimum volume to be purged (3xBV)*: — L

Field Measurements									
Time	DTW (mBTOC)	Volume Purged (L)	Temp (°C)	DO (mg/L)	EC (us/cm)	TDS (mg/L)	pH	Redox (mV)	Description
Stabilisation Criteria [1]				+/- 10%	+/- 3%	+/- 3%	+/- 0.05	+/- 10 mV	Odour, sediment load, colour, sheen.
	SW03	—	22.3	11.0?	658	449	4.94	75.5	Brown, with Algae, N/S
	SW01_1	—	14.6	7.48	102.7	83.2	4.81	44.1	Clear, N/S, N/O
	SW01_2	—	14.7	7.15	103.9	33.8	4.89	32.3	Clear, N/S N/O
	SW02	—	14.9	8.14	107.4	86.45	4.62	17.2	Brown, N/O, N/S,
	SW05	—	21.9	4.36	1266	864.1	4.89	50.7	Brown, N/O, N/S
	SW04		Dry						Dry
	SW06	—	14.9	7.45	104.0	33.85	4.81	24.5	Clear, N/O, N/S QC1 QC2

COMMENTS:

* Minimum volume to be purged except where wells are dry.
[1] These parameters may be considered stable when three consecutive readings (obtained several minutes apart) are within these levels.
Source "Victorian Environmental Protection Authority, *Groundwater Sampling Guidelines*, Publication 669, April 2000".

SW01_01 Upstream
SW01_02 Downstream
> Flowing West at point of Collection

BORING LOG SS15_1

Date Begin - End:	16-12-21	**Drilling Company:**	Kleinfelder
Logged By:	M. Kiraz	**Drill Crew:**	M. Kiraz
Hor.-Vert. Datum:	Not Available	**Drilling Equipment:**	Hand Auger
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column
Weather:	overcast	**Bore Diameter:**	

FIELD EXPLORATION

Depth (metres)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Surface Condition: Grass / Lithologic Description
0.2	Hand Auger		SS15_1_0.0				**FILL (silty clay)**: low plasticity, brown, moist, firm, with organics
0.4			SS15_1_0.3				**Silty CLAY**: low plasticity, brown/grey, moist, firm
0.6							
0.8							

The bore was terminated at approximately 0.4 m. below ground level.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
Bores SS15_2 to SS15_6 are identical to this one
The boring was backfilled with drill cuttings and compacted on 16 December, 2021.

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.: 20220348.001A
DRAWN BY: LZ
CHECKED BY: MK
DATE: 17-12-21

BORING LOG SS15_1

Glenlyone Recreation Reserve
Suttons Lane
Glenlyon, Victoria

1

Date Begin - End:	16-12-21	**Drilling Company:**	Kleinfelder	**BORING LOG SS27_1**	
Logged By:	M. Kiraz	**Drill Crew:**	M. Kiraz		
Hor.-Vert. Datum:	Not Available	**Drilling Equipment:**	Hand Auger		
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column		
Weather:	overcast	**Bore Diameter:**			

FIELD EXPLORATION

Depth (metres)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Surface Condition: Grass / Lithologic Description
0.0	Hand Auger		SS27_1_0.0				**FILL (silty clay)**: medium plasticity, brown, moist, firm, with organics
0.2							
0.4			SS27_1_0.4				**Silty CLAY**: medium plasticity, brown/grey, moist, stiff
0.6							
0.8							

The bore was terminated at approximately 0.5 m. below ground level.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
Bores SS27_2 to SS27_6 are identical to this one
The boring was backfilled with drill cuttings and compacted on 16 December, 2021.

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.: 20220348.001A
DRAWN BY: LZ
CHECKED BY: MK
DATE: 17-12-21

BORING LOG SS27_1

Glenlyone Recreation Reserve
Suttons Lane
Glenlyon, Victoria

2

Date Begin - End:	16-12-21	**Drilling Company:**	Kleinfelder	**BORING LOG SS29_1**
Logged By:	M. Kiraz	**Drill Crew:**	M. Kiraz	
Hor.-Vert. Datum:	Not Available	**Drilling Equipment:**	Hand Auger	
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column	
Weather:	overcast	**Bore Diameter:**		

FIELD EXPLORATION

Depth (metres)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Surface Condition: Grass / Lithologic Description
0.0	Hand Auger		SS29_1_0.0				**FILL (silty clay)**: low plasticity, brown, moist, firm, with organics
0.4			SS29_1_0.4				**Silty CLAY**: medium plasticity, brown/grey, moist, stiff

The bore was terminated at approximately 0.5 m. below ground level.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
Bores SS29_2 to SS29_6 are identical to this one
The boring was backfilled with drill cuttings and compacted on 16 December, 2021.

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.:	20220348.001A
DRAWN BY:	LZ
CHECKED BY:	MK
DATE:	17-12-21

BORING LOG SS29_1

Glenlyone Recreation Reserve
Suttons Lane
Glenlyon, Victoria

3

PAGE: 1 of 1

Date Begin - End:	16-12-21	**Drilling Company:**	Kleinfelder	**BORING LOG SW03**	
Logged By:	M. Kiraz	**Drill Crew:**	M. Kiraz		
Hor.-Vert. Datum:	Not Available	**Drilling Equipment:**	Hand Auger		
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column		
Weather:	overcast	**Bore Diameter:**			

Depth (metres)	FIELD EXPLORATION: Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Lithologic Description
	Hand Auger		SW03_0.0				**FILL (silty clay)**: fine-grained, medium plasticity, brown, moist, soft, minor sand
0.2							
0.4							
0.6							
0.8							

The bore was terminated at approximately 0.1 m. below ground level.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The boring was backfilled with drill cuttings and compacted on 16 December, 2021.

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.:	20220348.001A
DRAWN BY:	LZ
CHECKED BY:	MK
DATE:	17-12-21

BORING LOG SW03

Glenlyone Recreation Reserve
Suttons Lane
Glenlyon, Victoria

4

PAGE: 1 of 1

APPENDIX B: LABORATORY REPORTS

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2200148**	Page	: 1 of 4
Client	: **KLEINFELDER AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: JEREMY MCDONNELL	Contact	: Gregory Gommers
Address	: LEVEL 1, 95 COVENTRY STREET SOUTH MELBOURNE VIC, AUSTRALIA 3205	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +61-3-8549 9600
Project	: 20223763.001A	Date Samples Received	: 11-Jan-2022 09:50
Order number	: ----	Date Analysis Commenced	: 11-Jan-2022
C-O-C number	: ----	Issue Date	: 13-Jan-2022 15:34
Sampler	: MK		
Site	: Glenlyon EMP		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC02	----	----	----	----
				Sampling date / time	16-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2200148-001	--------	--------	--------	--------
					Result	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**23.6**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**54.9**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**86.5**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**68.1**	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		**82.3**	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**87.5**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	51
2-Chlorophenol-D4	93951-73-6	30	114
2.4.6-Tribromophenol	118-79-6	26	133
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	35	127
Anthracene-d10	1719-06-8	44	122
4-Terphenyl-d14	1718-51-0	44	124

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2200148**	Page	: 1 of 4
Client	: **KLEINFELDER AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: JEREMY MCDONNELL	Contact	: Gregory Gommers
Address	: LEVEL 1, 95 COVENTRY STREET SOUTH MELBOURNE VIC, AUSTRALIA 3205	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +61-3-8549 9600
Project	: 20223763.001A	Date Samples Received	: 11-Jan-2022
Order number	: ----	Date Analysis Commenced	: 11-Jan-2022
C-O-C number	: ----	Issue Date	: 13-Jan-2022
Sampler	: MK		
Site	: Glenlyon EMP		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4114200)									
EM2200148-001	QC02	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
EM2200132-011	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.003	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.026	0.028	6.6	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4114200)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	89.0	111
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	104	83.5	111
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	99.7	83.2	109
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	100	83.1	107
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.3	84.6	108
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	100	84.3	110
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	108	86.3	112
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4114170)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	69.0	42.8	114
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	76.5	48.6	119
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	74.1	47.0	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	76.7	49.5	119
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	80.1	49.4	121
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	78.7	48.4	122
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	84.9	50.3	124
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	84.9	50.0	126
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	85.9	49.4	127
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	81.6	48.7	126
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	78.9	54.5	134
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	84.5	56.1	134
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	84.3	55.6	135
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	84.2	54.4	126
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	83.6	54.5	126
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	83.9	54.4	126

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4114200)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EG020F: Dissolved Metals by ICP-MS (QCLot: 4114200) - continued							
EM2200132-011	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	99.1	76.6	124
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	101	74.6	118
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	101	71.0	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	102	76.0	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	101	75.0	133
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	98.8	73.0	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	104	75.0	131

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2200148**	Page	: 1 of 4
Client	: **KLEINFELDER AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: JEREMY MCDONNELL	Telephone	: +61-3-8549 9600
Project	: 20223763.001A	Date Samples Received	: 11-Jan-2022
Site	: Glenlyon EMP	Issue Date	: 13-Jan-2022
Sampler	: MK	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Amber Glass Bottle - Unpreserved						
QC02	11-Jan-2022	23-Dec-2021	**19**	----	----	----

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
QC02	**16-Dec-2021**	**----**	----	----	**11-Jan-2022**	14-Jun-2022	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
QC02	**16-Dec-2021**	**11-Jan-2022**	23-Dec-2021	×	**12-Jan-2022**	20-Feb-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	10	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.

KLEINFELDER AUSTRALIA PTY LTD

Page 1 of 1

COC number:

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COPY

Client:	SITE, COC AND CONTACT DATA				Laboratory:
Kleinfelder Australia Pty Ltd Level 1, 95 Coventry Street South Melbourne VIC 3205 Phone: 03 9907 6000	Site Name:	Glenlyon EMP	Sampler Name:	Matt Kiraz	Eurofins|mgt 6 Monterey Road Dandenong South VIC 3175 Phone: (03) 8564 5000 Fax: (03) 8564 5090
	QUOTE NUMBER		Contact Number:	467789650	
	Job No.:	20223763.001A	Contact e-mail:	mkiraz@kleinfelder.com	
	Required TAT:	24 hrs 48 hrs 3 days 5days (7 days)	PM name (if not sampler):	Jeremy McDonnell	
	Data QA level:	LAB minimum unless specified:	PM e-mail:	jmcdonnell@kleinfelder.com	

CHAIN OF CUSTODY						Send Results to:
Relinquished by (print):		Received by (print):		Relinquished:		Received by		Level 1, 95 Coventry Street South Melbourne, VIC 3205 melbournelab@kleinfelder.com Phone: 03 9907 6000
(sign)		(sign)		(sign)		(sign)		
Date / Time:		Date / Time:		Date / Time:		Date / Time:		
Notes:		Temp. (°C) Notes:	ice present / no ice seals intact / no seal	Notes:		Temp. (°C) Notes:	ice present / no ice seals intact / no seal	

Sample ID	Lab ID	Sample Point	Sample Type	Date	Start Depth	End Depth	Units	# Containers	Organic Analytes: PAH	Nutrients	Cations/Anions	TDS & TSS	Metals (As, Cd, Cr, Cu, Pb, Ni, Zn)	Metals	Other Analytes	Comments
SW01_1				16/12/2021				4	X	X	X	X	X			
SW01_2				16/12/2021				4	X	X	X	X	X			
SW02				16/12/2021				4	X	X	X	X	X			
SW03				16/12/2021				4	X	X	X	X	X			
SW05				16/12/2021				4	X	X	X	X	X			
SW06				16/12/2021				4	X	X	X	X	X			
QC01				16/12/2021				4	X	X	X	X	X			
QC02				16/12/2021				4	X				X			
Rinsate				16/12/2021				3	X							

Received: 950 11-1
C/note:
Temp: 14.6 °C Seal: Y (N)
Ice / Icepacks / NA

Carrier Courier

ALS

Environmental Division
Melbourne
Work Order Reference
EM2200148

Telephone : +61-3-8549 9600

851670

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2200200**	Page	: 1 of 4
Client	: **KLEINFELDER AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MATT KIRAZ	Contact	: Gregory Gommers
Address	: LEVEL 1, 95 COVENTRY STREET SOUTH MELBOURNE VIC, AUSTRALIA 3205	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +61-3-8549 9600
Project	: 20220348.001A	Date Samples Received	: 12-Jan-2022 10:15
Order number	: ----	Date Analysis Commenced	: 12-Jan-2022
C-O-C number	: ----	Issue Date	: 14-Jan-2022 16:07
Sampler	: Matt Kiraz		
Site	: Glenlyon		
Quote number	: EN/222		
No. of samples received	: 2		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC02	----	----	----	----
			Sampling date / time	16-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2200200-001	--------	--------	--------	--------
				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**26.6**	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**88.3**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**93.4**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**91.4**	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**104**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%	**107**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	**103**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2200200**	Page	: 1 of 3
Client	: **KLEINFELDER AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MATT KIRAZ	Contact	: Gregory Gommers
Address	: LEVEL 1, 95 COVENTRY STREET SOUTH MELBOURNE VIC, AUSTRALIA 3205	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +61-3-8549 9600
Project	: 20220348.001A	Date Samples Received	: 12-Jan-2022
Order number	: ----	Date Analysis Commenced	: 12-Jan-2022
C-O-C number	: ----	Issue Date	: 14-Jan-2022
Sampler	: Matt Kiraz		
Site	: Glenlyon		
Quote number	: EN/222		
No. of samples received	: 2		
No. of samples analysed	: 1		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4116247)									
EM2200200-001	QC02	EA055: Moisture Content	----	0.1	%	26.6	27.9	4.8	0% - 20%
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4116237)									
EM2200200-001	QC02	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4116237)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	93.1	85.7	123
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	87.3	81.0	123
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	96.4	83.6	120
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	94.8	81.3	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	88.9	79.4	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	91.7	81.7	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	83.3	78.3	124
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	86.4	79.9	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	80.8	76.9	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	90.2	80.9	130
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	3 mg/kg	73.0	70.0	121
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	92.5	80.4	130
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	77.8	70.2	123
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	75.0	67.9	122
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	75.8	65.8	123
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	82.2	65.8	127

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2200200**	Page	: 1 of 4
Client	: **KLEINFELDER AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MATT KIRAZ	Telephone	: +61-3-8549 9600
Project	: 20220348.001A	Date Samples Received	: 12-Jan-2022
Site	: Glenlyon	Issue Date	: 14-Jan-2022
Sampler	: Matt Kiraz	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content (Dried @ 105-110°C)						
Soil Glass Jar - Unpreserved						
QC02	----	----	----	12-Jan-2022	30-Dec-2021	**13**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Soil Glass Jar - Unpreserved						
QC02	12-Jan-2022	30-Dec-2021	**13**	----	----	----

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Matrix Spikes (MS)					
PAH/Phenols (SIM)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
QC02	**16-Dec-2021**	**----**	----	----	**12-Jan-2022**	30-Dec-2021	×
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
QC02	**16-Dec-2021**	**12-Jan-2022**	30-Dec-2021	×	**13-Jan-2022**	21-Feb-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	1	1	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	1	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

CHAIN OF CUSTODY

Relinquished by (print):		Received by (print):		Relinquished:	
(sign)		(sign)		(sign)	
Date / Time:		Date / Time:		Date / Time:	
Notes:		Temp. (°C)		Notes:	
		Notes:	ice present / no ice seals intact / no seal		

Received by:		Send Results to:	
(sign)			
Date / Time:		Level 1, 95 Coventry Street	
Temp. (°C)		South Melbourne, VIC 3205	
Notes:	ice present / no ice seals intact / no seal	melbournelab@kleinfelder.com	
		Phone: 03 9907 6000	

Sample ID	Lab ID	Sample Point	Sample Type	Date	Start Depth	End Depth	Units	# Containers	Organic Analytes						Metals			Other Analytes					Comments
									PAH	HOLD													
SS15_4_0.0-0.1			Soil	16/12/2021				1	X														
SS15_4_0.3-0.4			Soil	16/12/2021				1		X													
SS15_5_0.0-0.1			Soil	16/12/2021				1	X														
SS15_5_0.3-0.4			Soil	16/12/2021				1		X													
SS15_6_0.0-0.1			Soil	16/12/2021				1	X														
SS15_6_0.3-0.4			Soil	16/12/2021				1		X													
SS29_1_0.0_0.1			Soil	16/12/2021				1	X														
SS29_1_0.4_0.5			Soil	16/12/2021				1		X													
SS29_2_0.0_0.1			Soil	16/12/2021				1	X														
SS29_2_0.4_0.5			Soil	16/12/2021				1		X													
SS29_3_0.0_0.1			Soil	16/12/2021				1	X														
SS29_3_0.4_0.5			Soil	16/12/2021				1		X													
SS29_4_0.0_0.1			Soil	16/12/2021				1	X														
SS29_4_0.4_0.5			Soil	16/12/2021				1		X													
SS29_5_0.0_0.1			Soil	16/12/2021				1	X														
SS29_5_0.4_0.5			Soil	16/12/2021				1		X													
SS29_6_0.0_0.1			Soil	16/12/2021				1	X														
SS29_6_0.4_0.5			Soil	16/12/2021				1		X													
SW03_0.0_0.1			Soil	16/12/2021				1	X	X													
S1			Clay Fragmer	16/12/2021				1	X														
QC01			Soil	16/12/2021				1	X														
QC02			Soil	16/12/2021				1	X														PLEASE FORWARD TO ALS
QC03			Soil	16/12/2021				1		X													

COPY

3

Environmental Division
Melbourne
Work Order Reference
EM2200200

Telephone : +61-3-8549 9600

Relinquished by Sullivan
on 12/01 at 8AM

Received: 12-1 1015 Carrier: courier
C/note:
Temp: 14.5 °C Seal: Y / N
Ice / Icebricks / NA

AM

CHAIN OF CUSTODY

Relinquished by (print):		*Received by (print):*		*Relinquished:*	
(sign)		*(sign)*		*(sign)*	
Date / Time:		*Date / Time:*		*Date / Time:*	
Notes:		*Temp. (°C)*		*Notes:*	
		Notes:	ice present / no ice seals intact / no seal		

	Received by:		Send Results to:	
	(sign)			
	Date / Time:		Level 1, 95 Coventry Street	
	Temp. (°C)		South Melbourne, VIC 3205	
	Notes:	ice present / no ice seals intact / no seal	melbournelab@kleinfelder.com Phone: 03 9907 6000	

	Sample ID	Lab ID	Sample Point	Sample Type	Date	Start Depth	End Depth	Units	# Containers	Organic Analytes									Metals			Other Analytes					Comments
										PAH	HOLD																	
2	QC04			Soil	16/12/2021				1		X																	PLEASE FORWARD TO ALS
	QC05			Water	16/12/2021				3	X																		

COPY

3

Relinquished by
Sultonah on 12/01
at 8am

Client:	SITE, COC AND CONTACT DATA				Laboratory:
Kleinfelder Australia Pty Ltd	*Site Name:*	Glenlyon	*Sampler Name:*	Matt Kiraz	Eurofins|mgt
Level 1, 95 Coventry Street	*QUOTE NUMBER*		*Contact Number:*	467789650	6 Monterey Road
South Melbourne	*Job No.:*	20220348.001A	*Contact e-mail:*	mkiraz@kleinfelder.com	Dandenong South
VIC 3205	*Required TAT:*	24 hrs 48 hrs 3 days 5days 7 days	*PM name (if not sampler):*	Jeremy McDonnell	VIC 3175
Phone: 03 9907 6000	*Data QA level:*	LAB minimum unless specified:	*PM e-mail:*	jmcdonnell@kleinfelder.com	Phone: (03) 8564 5000 Fax: (03) 8564 5090

CHAIN OF CUSTODY						Send Results to:
Relinquished by (print):		*Received by (print):*		*Relinquished by (print):*		*Received by:*		
(sign)		*(sign)*		*(sign)*		*(sign)*		Level 1, 95 Coventry Street
Date / Time:		*Date / Time:*		*Date / Time:*		*Date / Time:*		South Melbourne, VIC 3205
Notes:		*Temp.* (°C)		*Notes:*		*Temp.* (°C)		
		Notes:	ice present / no ice seals intact / no seal			*Notes:*	ice present / no ice seals intact / no seal	melbournelab@kleinfelder.com Phone: 03 9907 6000

Sample ID	Lab ID	Sample Point	Sample Type	Date	Start Depth	End Depth	Units	# Containers	Organic Analytes						Metals			Other Analytes					Comments
									PAH	HOLD													
SS27_1_0.0_0.1			Soil	16/12/2021				1	X														
SS27_1_0.4_0.5			Soil	16/12/2021				1		X													
SS27_2_0.0_0.1			Soil	16/12/2021				1	X														
SS27_2_0.4_0.5			Soil	16/12/2021				1		X													
SS27_3_0.0_0.1			Soil	16/12/2021				1	X														
SS27_3_0.4_0.5			Soil	16/12/2021				1		X													
SS27_4_0.0_0.1			Soil	16/12/2021				1	X														
SS27_4_0.4_0.5			Soil	16/12/2021				1		X													
SS27_5_0.0_0.1			Soil	16/12/2021				1	X														
SS27_5_0.4_0.5			Soil	16/12/2021				1		X													
SS27_6_0.0_0.1			Soil	16/12/2021				1	X														
SS27_6_0.4_0.5			Soil	16/12/2021				1		X													
SS15_1_0.0-0.1			Soil	16/12/2021				1	X														
SS15_1_0.3-0.4			Soil	16/12/2021				1		X													
SS15_2_0.0-0.1			Soil	16/12/2021				1	X														
SS15_2_0.3-0.4			Soil	16/12/2021				1		X													
SS15_3_0.0-0.1			Soil	16/12/2021				1	X														
SS15_3_0.3-0.4			Soil	16/12/2021				1		X													
									Organic Analytes						Metals			Other Analytes					

CHAIN OF CUSTODY

Relinquished by (print):		*Received by (print):*		*Relinquished by (print):*	
(sign)		*(sign)*		*(sign)*	
Date / Time:		*Date / Time:*		*Date / Time:*	
Notes:		*Temp. (°C)*		*Notes:*	
		Notes:	ice present / no ice seals intact / no seal		

Received by:		Send Results to:		
(sign)				
Date / Time:		Level 1, 95 Coventry Street		
Temp. (°C)		South Melbourne, VIC 3205		
Notes:	ice present / no ice seals intact / no seal	melbournelab@kleinfelder.com Phone: 03 9907 6000		

Sample ID	Lab ID	Sample Point	Sample Type	Date	Start Depth	End Depth	Units	# Containers	PAH	HOLD																Comments
SS15_4_0.0-0.1			Soil	16/12/2021				1	X																	
SS15_4_0.3-0.4			Soil	16/12/2021				1		X																
SS15_5_0.0-0.1			Soil	16/12/2021				1	X																	
SS15_5_0.3-0.4			Soil	16/12/2021				1		X																
SS15_6_0.0-0.1			Soil	16/12/2021				1	X																	
SS15_6_0.3-0.4			Soil	16/12/2021				1		X																
SS29_1_0.0_0.1			Soil	16/12/2021				1	X																	
SS29_1_0.4_0.5			Soil	16/12/2021				1		X																
SS29_2_0.0_0.1			Soil	16/12/2021				1	X																	
SS29_2_0.4_0.5			Soil	16/12/2021				1		X																
SS29_3_0.0_0.1			Soil	16/12/2021				1	X																	
SS29_3_0.4_0.5			Soil	16/12/2021				1		X																
SS29_4_0.0_0.1			Soil	16/12/2021				1	X																	
SS29_4_0.4_0.5			Soil	16/12/2021				1		X																
SS29_5_0.0_0.1			Soil	16/12/2021				1	X																	
SS29_5_0.4_0.5			Soil	16/12/2021				1		X																
SS29_6_0.0_0.1			Soil	16/12/2021				1	X																	
SS29_6_0.4_0.5			Soil	16/12/2021				1		X																
SW03_0.0_0.1			Soil	16/12/2021				1	X	X																
S1			Clay Fragmen	16/12/2021				1	X																	
QC01			Soil	16/12/2021				1	X																	
QC02			Soil	16/12/2021				1	X																	**PLEASE FORWARD TO ALS**
QC03			Soil	16/12/2021				1		X																
									Organic Analytes									Metals			Other Analytes					

CHAIN OF CUSTODY

Relinquished by (print):		*Received by (print):*		*Relinquished by:*	
(sign)		*(sign)*		*(sign)*	
Date / Time:		*Date / Time:*		*Date / Time:*	
Notes:		*Temp. (°C)*		*Notes:*	
		Notes:	ice present / no ice seals intact / no seal		*Received by:*
					(sign)
					Date / Time:
					Temp. (°C)
					Notes:
					ice present / no ice seals intact / no seal

Send Results to:

Level 1, 95 Coventry Street
South Melbourne, VIC 3205

melbournelab@kleinfelder.com
Phone: 03 9907 6000

Sample ID	Lab ID	Sample Point	Sample Type	Date	Start Depth	End Depth	Units	# Containers	PAH	HOLD															Comments
QC04			Soil	16/12/2021				1		X															**PLEASE FORWARD TO ALS**
QC05			Water	16/12/2021				3	X																

Kleinfelder Australia Pty Ltd (VIC)
Level 1, 95 Coventry St
South Melbourne
VIC 3205

Attention: **Jeremy McDonnell**

Report **854503-S-V2**
Project name GLENLYON
Project ID 20220348.001A
Received Date Jan 11, 2022

Client Sample ID			**SS27_1_0.0-0.1**	**SS27_2_0.0-0.1**	**SS27_3_0.0-0.1**	**SS27_4_0.0-0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M22-Ja05279**	**M22-Ja05280**	**M22-Ja05281**	**M22-Ja05282**
Date Sampled			**Dec 15, 2022**	**Dec 17, 2022**	**Dec 19, 2022**	**Dec 21, 2022**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	1.6	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	1.9	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	2.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	1.2	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	2.3	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	0.9	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	0.7	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	1.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	1.0	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	1.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	9.1	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	108	105	114	104
p-Terphenyl-d14 (surr.)	1	%	102	141	108	144
% Moisture	1	%	26	37	25	35

Client Sample ID			SS27_5_0.0-0.1	SS27_6_0.0-0.1	SS15_1_0.0-0.1	SS15_2_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M22-Ja05283	M22-Ja05284	M22-Ja05285	M22-Ja05286
Date Sampled			Dec 23, 2022	Dec 25, 2021	Dec 27, 2022	Dec 29, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	15	< 0.5	2.8	6.4
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	15	0.6	3.0	6.7
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	15	1.2	3.3	6.9
Acenaphthene	0.5	mg/kg	0.7	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	1.2	< 0.5	< 0.5	0.6
Benz(a)anthracene	0.5	mg/kg	4.2	< 0.5	0.8	1.9
Benzo(a)pyrene	0.5	mg/kg	10.0	< 0.5	2.0	4.8
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	18	< 0.5	3.9	8.1
Benzo(g.h.i)perylene	0.5	mg/kg	4.6	< 0.5	0.8	1.5
Benzo(k)fluoranthene	0.5	mg/kg	6.5	< 0.5	1.6	3.8
Chrysene	0.5	mg/kg	6.4	< 0.5	1.3	3.0
Dibenz(a.h)anthracene	0.5	mg/kg	1.8	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	14	< 0.5	3.1	6.2
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	6.4	< 0.5	1.1	2.2
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	5.2	< 0.5	1.0	2.1
Pyrene	0.5	mg/kg	13	< 0.5	2.9	5.8
Total PAH*	0.5	mg/kg	92	< 0.5	18.5	40
2-Fluorobiphenyl (surr.)	1	%	109	118	106	136
p-Terphenyl-d14 (surr.)	1	%	105	116	102	128
% Moisture	1	%	28	32	24	17

Client Sample ID			SS15_3_0.0-0.1	SS15_4_0.0-0.1	SS15_5_0.0-0.1	SS15_6_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M22-Ja05287	M22-Ja05288	M22-Ja05289	M22-Ja05290
Date Sampled			Dec 31, 2022	Jan 02, 2023	Jan 04, 2023	Jan 06, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	2.7	25	5.6	3.0
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	2.9	25	5.6	3.3
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	3.2	25	5.6	3.5
Acenaphthene	0.5	mg/kg	< 0.5	1.3	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	2.4	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	0.7	6.2	1.3	0.8
Benzo(a)pyrene	0.5	mg/kg	2.0	17	3.6	2.2
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	3.1	29	7.1	4.1
Benzo(g.h.i)perylene	0.5	mg/kg	0.7	5.2	1.4	0.9
Benzo(k)fluoranthene	0.5	mg/kg	1.6	13	2.5	1.8
Chrysene	0.5	mg/kg	1.1	10	2.1	1.2
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	2.1	0.7	< 0.5
Fluoranthene	0.5	mg/kg	3.0	26	5.0	3.2
Fluorene	0.5	mg/kg	< 0.5	0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	1.1	8.4	2.1	1.2
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SS15_3_0.0-0.1	SS15_4_0.0-0.1	SS15_5_0.0-0.1	SS15_6_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M22-Ja05287	M22-Ja05288	M22-Ja05289	M22-Ja05290
Date Sampled			Dec 31, 2022	Jan 02, 2023	Jan 04, 2023	Jan 06, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	0.9	8.3	1.3	0.9
Pyrene	0.5	mg/kg	2.8	23	4.6	2.9
Total PAH*	0.5	mg/kg	17	152.4	31.7	19.2
2-Fluorobiphenyl (surr.)	1	%	140	120	124	132
p-Terphenyl-d14 (surr.)	1	%	141	109	130	140
% Moisture	1	%	14	17	16	16

Client Sample ID			SS29_1_0.0-0.1	SS29_2_0.0-0.1	SS29_3_0.0-0.1	SS29_4_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M22-Ja05291	M22-Ja05292	M22-Ja05293	M22-Ja05294
Date Sampled			Jan 08, 2023	Jan 10, 2023	Jan 12, 2023	Jan 14, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	26	1.2	6.3	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	26	1.5	6.3	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	27	1.8	6.3	1.2
Acenaphthene	0.5	mg/kg	2.1	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	3.2	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	9.9	< 0.5	1.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	19	0.9	4.0	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	35	1.9	7.7	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	8.3	< 0.5	1.8	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	12	0.7	2.9	< 0.5
Chrysene	0.5	mg/kg	15	< 0.5	2.3	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	0.8	< 0.5
Fluoranthene	0.5	mg/kg	30	1.2	5.2	< 0.5
Fluorene	0.5	mg/kg	0.7	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	12	0.8	2.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	9.7	< 0.5	1.7	< 0.5
Pyrene	0.5	mg/kg	27	1.1	5.1	< 0.5
Total PAH*	0.5	mg/kg	183.9	6.6	35.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	116	138	133	97
p-Terphenyl-d14 (surr.)	1	%	118	127	123	135
% Moisture	1	%	29	28	32	31

Client Sample ID			SS29_5_0.0-0.1	SS29_6_0.0-0.1	SW03_0.0._0.1	QC01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M22-Ja05295	M22-Ja05296	M22-Ja05297	M22-Ja05298
Date Sampled			Jan 16, 2023	Jan 18, 2023	Jan 20, 2023	Jan 21, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	1.4	5.2	< 0.5	2.1
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.7	5.2	0.6	2.3
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	2.0	5.2	1.2	2.6
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	1.2	< 0.5	0.6
Benzo(a)pyrene	0.5	mg/kg	1.1	3.3	< 0.5	1.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	1.9	6.2	< 0.5	2.8
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	1.4	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	0.9	2.7	< 0.5	1.3
Chrysene	0.5	mg/kg	0.6	1.9	< 0.5	1.0
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	0.6	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	1.4	4.5	< 0.5	2.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	0.6	2.1	< 0.5	0.7
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	1.5	< 0.5	0.7
Pyrene	0.5	mg/kg	1.3	4.2	< 0.5	2.3
Total PAH*	0.5	mg/kg	7.8	29.6	< 0.5	13.4
2-Fluorobiphenyl (surr.)	1	%	109	114	109	133
p-Terphenyl-d14 (surr.)	1	%	102	113	108	137
% Moisture	1	%	35	29	29	27

Client Sample ID			s1
Sample Matrix			Solid
Eurofins Sample No.			M22-Ja05339
Date Sampled			Dec 15, 2022
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	140
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	140
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	140
Acenaphthene	0.5	mg/kg	14
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	8.7
Benz(a)anthracene	0.5	mg/kg	70
Benzo(a)pyrene	0.5	mg/kg	89
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	80
Benzo(g.h.i)perylene	0.5	mg/kg	100
Benzo(k)fluoranthene	0.5	mg/kg	71
Chrysene	0.5	mg/kg	79
Dibenz(a.h)anthracene	0.5	mg/kg	18
Fluoranthene	0.5	mg/kg	120
Fluorene	0.5	mg/kg	5.0
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	54
Naphthalene	0.5	mg/kg	2.3

Client Sample ID			s1
Sample Matrix			Solid
Eurofins Sample No.			M22-Ja05339
Date Sampled			Dec 15, 2022
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Phenanthrene	0.5	mg/kg	57
Pyrene	0.5	mg/kg	120
Total PAH*	0.5	mg/kg	888
2-Fluorobiphenyl (surr.)	1	%	98
p-Terphenyl-d14 (surr.)	1	%	88
% Moisture	1	%	5.0

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 21, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
% Moisture	Melbourne	Jan 12, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			

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Project Name: GLENLYON
Project ID: 20220348.001A

Order No.:
Report #: 854503
Phone: 03 9907 6000
Fax: 03 9907 6001

Received: Jan 11, 2022 12:02 PM
Due: Jan 18, 2022
Priority: 5 Day
Contact Name: Jeremy McDonnell

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail	HOLD	Sample preparation - crushing	Polycyclic Aromatic Hydrocarbons	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217				
Brisbane Laboratory - NATA # 1261 Site # 20794				
Mayfield Laboratory - NATA # 1261 Site # 25079				
Perth Laboratory - NATA # 2377 Site # 2370				
External Laboratory				

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	SS27_1_0.0-0.1	Dec 15, 2022		Soil	M22-Ja05279			X	X
2	SS27_2_0.0-0.1	Dec 17, 2022		Soil	M22-Ja05280			X	X
3	SS27_3_0.0-0.1	Dec 19, 2022		Soil	M22-Ja05281			X	X
4	SS27_4_0.0-0.1	Dec 21, 2022		Soil	M22-Ja05282			X	X
5	SS27_5_0.0-0.1	Dec 23, 2022		Soil	M22-Ja05283			X	X
6	SS27_6_0.0-	Dec 25, 2021		Soil	M22-Ja05284			X	X

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Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217									
Brisbane Laboratory - NATA # 1261 Site # 20794									
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
	0.1								
7	SS15_1_0.0-0.1	Dec 27, 2022		Soil	M22-Ja05285			X	X
8	SS15_2_0.0-0.1	Dec 29, 2022		Soil	M22-Ja05286			X	X
9	SS15_3_0.0-0.1	Dec 31, 2022		Soil	M22-Ja05287			X	X
10	SS15_4_0.0-0.1	Jan 02, 2023		Soil	M22-Ja05288			X	X
11	SS15_5_0.0-0.1	Jan 04, 2023		Soil	M22-Ja05289			X	X
12	SS15_6_0.0-0.1	Jan 06, 2023		Soil	M22-Ja05290			X	X

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Sample Detail						HOLD	Sample preparation - crushing	Polycyclic Aromatic Hydrocarbons	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217									
Brisbane Laboratory - NATA # 1261 Site # 20794									
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
13	SS29_1_0.0-0.1	Jan 08, 2023		Soil	M22-Ja05291			X	X
14	SS29_2_0.0-0.1	Jan 10, 2023		Soil	M22-Ja05292			X	X
15	SS29_3_0.0-0.1	Jan 12, 2023		Soil	M22-Ja05293			X	X
16	SS29_4_0.0-0.1	Jan 14, 2023		Soil	M22-Ja05294			X	X
17	SS29_5_0.0-0.1	Jan 16, 2023		Soil	M22-Ja05295			X	X
18	SS29_6_0.0-0.1	Jan 18, 2023		Soil	M22-Ja05296			X	X
19	SW03_0.0._0.	Jan 20, 2023		Soil	M22-Ja05297			X	X

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Sample Detail						HOLD	Sample preparation - crushing	Polycyclic Aromatic Hydrocarbons	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217									
Brisbane Laboratory - NATA # 1261 Site # 20794									
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
	1								
20	QC01	Jan 21, 2023		Soil	M22-Ja05298			X	X
21	QC03	Jan 22, 2023		Soil	M22-Ja05299	X			
22	QC05	Jan 23, 2023		Water	M22-Ja05300			X	
23	SS27_1_0.4-0.5	Dec 16, 2022		Soil	M22-Ja05301	X			
24	SS27_2_0.4-0.5	Dec 18, 2022		Soil	M22-Ja05302	X			
25	SS27_3_0.4-0.5	Dec 20, 2022		Soil	M22-Ja05303	X			
26	SS27_4_0.4-0.5	Dec 22, 2022		Soil	M22-Ja05304	X			

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Sample Detail						HOLD	Sample preparation - crushing	Polycyclic Aromatic Hydrocarbons	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217									
Brisbane Laboratory - NATA # 1261 Site # 20794									
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
27	SS27_5_0.4-0.5	Dec 24, 2022		Soil	M22-Ja05305	X			
28	SS27_6_0.4-0.5	Dec 26, 2022		Soil	M22-Ja05306	X			
29	SS15_1_0.3-0.4	Dec 28, 2022		Soil	M22-Ja05307	X			
30	SS15_2_0.3-0.4	Dec 30, 2022		Soil	M22-Ja05308	X			
31	SS15_3_0.3-0.4	Jan 01, 2023		Soil	M22-Ja05309	X			
32	SS15_4_0.3-0.4	Jan 03, 2023		Soil	M22-Ja05310	X			
33	SS15_5_0.3-	Jan 05, 2023		Soil	M22-Ja05311	X			

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Sample Detail						HOLD	Sample preparation - crushing	Polycyclic Aromatic Hydrocarbons	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217									
Brisbane Laboratory - NATA # 1261 Site # 20794									
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
	0.4								
34	SS15_6_0.3-0.4	Jan 07, 2023		Soil	M22-Ja05312	X			
35	SS29_1_0.4-0.5	Jan 09, 2023		Soil	M22-Ja05313	X			
36	SS29_2_0.4-0.5	Jan 11, 2023		Soil	M22-Ja05314	X			
37	SS29_3_0.4-0.5	Jan 13, 2023		Soil	M22-Ja05315	X			
38	SS29_4_0.4-0.5	Jan 15, 2023		Soil	M22-Ja05316	X			
39	SS29_5_0.4-0.5	Jan 17, 2023		Soil	M22-Ja05317	X			

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Sample Detail						HOLD	Sample preparation - crushing	Polycyclic Aromatic Hydrocarbons	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217									
Brisbane Laboratory - NATA # 1261 Site # 20794									
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
40	SS29_6_0.4-0.5	Jan 19, 2023		Soil	M22-Ja05318	X			
41	s1	Dec 15, 2022		Solid	M22-Ja05339		X	X	X
Test Counts						19	1	22	21

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.4
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	85			70-130	Pass	
Acenaphthylene	%	86			70-130	Pass	
Anthracene	%	106			70-130	Pass	
Benz(a)anthracene	%	87			70-130	Pass	
Benzo(a)pyrene	%	105			70-130	Pass	
Benzo(b&j)fluoranthene	%	121			70-130	Pass	
Benzo(g.h.i)perylene	%	82			70-130	Pass	
Benzo(k)fluoranthene	%	101			70-130	Pass	
Chrysene	%	104			70-130	Pass	
Dibenz(a.h)anthracene	%	104			70-130	Pass	
Fluoranthene	%	94			70-130	Pass	
Fluorene	%	104			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	85			70-130	Pass	
Naphthalene	%	73			70-130	Pass	
Phenanthrene	%	116			70-130	Pass	
Pyrene	%	94			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M22-Ja05285	CP	%	100			70-130	Pass	
Acenaphthylene	M22-Ja05285	CP	%	99			70-130	Pass	
Anthracene	M22-Ja05285	CP	%	115			70-130	Pass	
Benz(a)anthracene	M22-Ja05285	CP	%	71			70-130	Pass	
Benzo(a)pyrene	M22-Ja05285	CP	%	87			70-130	Pass	
Benzo(b&j)fluoranthene	M22-Ja05285	CP	%	101			70-130	Pass	
Benzo(g.h.i)perylene	M22-Ja05285	CP	%	104			70-130	Pass	
Benzo(k)fluoranthene	M22-Ja05285	CP	%	120			70-130	Pass	
Chrysene	M22-Ja05285	CP	%	87			70-130	Pass	
Dibenz(a.h)anthracene	M22-Ja05285	CP	%	87			70-130	Pass	
Fluoranthene	M22-Ja05285	CP	%	108			70-130	Pass	
Fluorene	M22-Ja05285	CP	%	122			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Indeno(1.2.3-cd)pyrene	M22-Ja05285	CP	%	106			70-130	Pass	
Naphthalene	M22-Ja05285	CP	%	81			70-130	Pass	
Phenanthrene	M22-Ja05285	CP	%	91			70-130	Pass	
Pyrene	M22-Ja05285	CP	%	107			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M22-Ja05295	CP	%	93			70-130	Pass	
Acenaphthylene	M22-Ja05295	CP	%	94			70-130	Pass	
Anthracene	M22-Ja05295	CP	%	107			70-130	Pass	
Benz(a)anthracene	M22-Ja05295	CP	%	98			70-130	Pass	
Benzo(a)pyrene	M22-Ja05295	CP	%	120			70-130	Pass	
Benzo(b&j)fluoranthene	M22-Ja05295	CP	%	95			70-130	Pass	
Benzo(g.h.i)perylene	M22-Ja05295	CP	%	101			70-130	Pass	
Benzo(k)fluoranthene	M22-Ja05295	CP	%	109			70-130	Pass	
Chrysene	M22-Ja05295	CP	%	79			70-130	Pass	
Dibenz(a.h)anthracene	M22-Ja05295	CP	%	83			70-130	Pass	
Fluoranthene	M22-Ja05295	CP	%	92			70-130	Pass	
Fluorene	M22-Ja05295	CP	%	115			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M22-Ja05295	CP	%	101			70-130	Pass	
Naphthalene	M22-Ja05295	CP	%	78			70-130	Pass	
Phenanthrene	M22-Ja05295	CP	%	87			70-130	Pass	
Pyrene	M22-Ja05295	CP	%	94			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M22-Ja05279	CP	%	26	26	1.0	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M22-Ja05289	CP	%	16	19	19	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(b&j)fluoranthene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

This report has been revised V2 following repeat analysis. PAH results for sample Ja05286 and Ja05291 have now been replaced by the repeat results.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Savini Suduweli	Analytical Services Manager
Joseph Edouard	Senior Analyst-Organic (VIC)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Kleinfelder Australia Pty Ltd (VIC)
Level 1, 95 Coventry St
South Melbourne
VIC 3205

Attention: **Jeremy McDonnell**

Report **854503-S**
Project name GLENLYON
Project ID 20220348.001A
Received Date Jan 11, 2022

Client Sample ID			**SS27_1_0.0-0.1**	**SS27_2_0.0-0.1**	**SS27_3_0.0-0.1**	**SS27_4_0.0-0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M22-Ja05279**	**M22-Ja05280**	**M22-Ja05281**	**M22-Ja05282**
Date Sampled			**Dec 15, 2022**	**Dec 17, 2022**	**Dec 19, 2022**	**Dec 21, 2022**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	1.6	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	1.9	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	2.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	1.2	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	2.3	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	0.9	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	0.7	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	1.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	1.0	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	1.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	9.1	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	108	105	114	104
p-Terphenyl-d14 (surr.)	1	%	102	141	108	144
% Moisture	1	%	26	37	25	35

Client Sample ID			SS27_5_0.0-0.1	SS27_6_0.0-0.1	SS15_1_0.0-0.1	SS15_2_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M22-Ja05283	M22-Ja05284	M22-Ja05285	M22-Ja05286
Date Sampled			Dec 23, 2022	Dec 25, 2021	Dec 27, 2022	Dec 29, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	15	< 0.5	2.8	9.3
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	15	0.6	3.0	9.3
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	15	1.2	3.3	9.3
Acenaphthene	0.5	mg/kg	0.7	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	1.2	< 0.5	< 0.5	0.8
Benz(a)anthracene	0.5	mg/kg	4.2	< 0.5	0.8	2.8
Benzo(a)pyrene	0.5	mg/kg	10.0	< 0.5	2.0	6.1
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	18	< 0.5	3.9	11
Benzo(g.h.i)perylene	0.5	mg/kg	4.6	< 0.5	0.8	2.3
Benzo(k)fluoranthene	0.5	mg/kg	6.5	< 0.5	1.6	4.6
Chrysene	0.5	mg/kg	6.4	< 0.5	1.3	4.4
Dibenz(a.h)anthracene	0.5	mg/kg	1.8	< 0.5	< 0.5	0.9
Fluoranthene	0.5	mg/kg	14	< 0.5	3.1	9.4
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	6.4	< 0.5	1.1	3.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	5.2	< 0.5	1.0	3.4
Pyrene	0.5	mg/kg	13	< 0.5	2.9	8.6
Total PAH*	0.5	mg/kg	92	< 0.5	18.5	57.8
2-Fluorobiphenyl (surr.)	1	%	109	118	106	122
p-Terphenyl-d14 (surr.)	1	%	105	116	102	122
% Moisture	1	%	28	32	24	17

Client Sample ID			SS15_3_0.0-0.1	SS15_4_0.0-0.1	SS15_5_0.0-0.1	SS15_6_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M22-Ja05287	M22-Ja05288	M22-Ja05289	M22-Ja05290
Date Sampled			Dec 31, 2022	Jan 02, 2023	Jan 04, 2023	Jan 06, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	2.7	25	5.6	3.0
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	2.9	25	5.6	3.3
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	3.2	25	5.6	3.5
Acenaphthene	0.5	mg/kg	< 0.5	1.3	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	2.4	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	0.7	6.2	1.3	0.8
Benzo(a)pyrene	0.5	mg/kg	2.0	17	3.6	2.2
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	3.1	29	7.1	4.1
Benzo(g.h.i)perylene	0.5	mg/kg	0.7	5.2	1.4	0.9
Benzo(k)fluoranthene	0.5	mg/kg	1.6	13	2.5	1.8
Chrysene	0.5	mg/kg	1.1	10	2.1	1.2
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	2.1	0.7	< 0.5
Fluoranthene	0.5	mg/kg	3.0	26	5.0	3.2
Fluorene	0.5	mg/kg	< 0.5	0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	1.1	8.4	2.1	1.2
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SS15_3_0.0-0.1	SS15_4_0.0-0.1	SS15_5_0.0-0.1	SS15_6_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M22-Ja05287	M22-Ja05288	M22-Ja05289	M22-Ja05290
Date Sampled			Dec 31, 2022	Jan 02, 2023	Jan 04, 2023	Jan 06, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	0.9	8.3	1.3	0.9
Pyrene	0.5	mg/kg	2.8	23	4.6	2.9
Total PAH*	0.5	mg/kg	17	152.4	31.7	19.2
2-Fluorobiphenyl (surr.)	1	%	140	120	124	132
p-Terphenyl-d14 (surr.)	1	%	141	109	130	140
% Moisture	1	%	14	17	16	16

Client Sample ID			SS29_1_0.0-0.1	SS29_2_0.0-0.1	SS29_3_0.0-0.1	SS29_4_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M22-Ja05291	M22-Ja05292	M22-Ja05293	M22-Ja05294
Date Sampled			Jan 08, 2023	Jan 10, 2023	Jan 12, 2023	Jan 14, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	52	1.2	6.3	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	52	1.5	6.3	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	52	1.8	6.3	1.2
Acenaphthene	0.5	mg/kg	4.1	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	6.8	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	19	< 0.5	1.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	31	0.9	4.0	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	61	1.9	7.7	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	20	< 0.5	1.8	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	14	0.7	2.9	< 0.5
Chrysene	0.5	mg/kg	27	< 0.5	2.3	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	8.3	< 0.5	0.8	< 0.5
Fluoranthene	0.5	mg/kg	43	1.2	5.2	< 0.5
Fluorene	0.5	mg/kg	1.7	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	26	0.8	2.5	< 0.5
Naphthalene	0.5	mg/kg	0.8	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	21	< 0.5	1.7	< 0.5
Pyrene	0.5	mg/kg	40	1.1	5.1	< 0.5
Total PAH*	0.5	mg/kg	323.7	6.6	35.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	131	138	133	97
p-Terphenyl-d14 (surr.)	1	%	134	127	123	135
% Moisture	1	%	29	28	32	31

Client Sample ID			SS29_5_0.0-0.1	SS29_6_0.0-0.1	SW03_0.0._0.1	QC01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M22-Ja05295	M22-Ja05296	M22-Ja05297	M22-Ja05298
Date Sampled			Jan 16, 2023	Jan 18, 2023	Jan 20, 2023	Jan 21, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	1.4	5.2	< 0.5	2.1
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.7	5.2	0.6	2.3
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	2.0	5.2	1.2	2.6
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	1.2	< 0.5	0.6
Benzo(a)pyrene	0.5	mg/kg	1.1	3.3	< 0.5	1.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	1.9	6.2	< 0.5	2.8
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	1.4	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	0.9	2.7	< 0.5	1.3
Chrysene	0.5	mg/kg	0.6	1.9	< 0.5	1.0
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	0.6	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	1.4	4.5	< 0.5	2.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	0.6	2.1	< 0.5	0.7
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	1.5	< 0.5	0.7
Pyrene	0.5	mg/kg	1.3	4.2	< 0.5	2.3
Total PAH*	0.5	mg/kg	7.8	29.6	< 0.5	13.4
2-Fluorobiphenyl (surr.)	1	%	109	114	109	133
p-Terphenyl-d14 (surr.)	1	%	102	113	108	137
% Moisture	1	%	35	29	29	27

Client Sample ID			s1
Sample Matrix			Solid
Eurofins Sample No.			M22-Ja05339
Date Sampled			Dec 15, 2022
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	140
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	140
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	140
Acenaphthene	0.5	mg/kg	14
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	8.7
Benz(a)anthracene	0.5	mg/kg	70
Benzo(a)pyrene	0.5	mg/kg	89
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	80
Benzo(g.h.i)perylene	0.5	mg/kg	100
Benzo(k)fluoranthene	0.5	mg/kg	71
Chrysene	0.5	mg/kg	79
Dibenz(a.h)anthracene	0.5	mg/kg	18
Fluoranthene	0.5	mg/kg	120
Fluorene	0.5	mg/kg	5.0
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	54
Naphthalene	0.5	mg/kg	2.3

Client Sample ID			s1
Sample Matrix			**Solid**
Eurofins Sample No.			**M22-Ja05339**
Date Sampled			**Dec 15, 2022**
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Phenanthrene	0.5	mg/kg	57
Pyrene	0.5	mg/kg	120
Total PAH*	0.5	mg/kg	888
2-Fluorobiphenyl (surr.)	1	%	98
p-Terphenyl-d14 (surr.)	1	%	88
% Moisture	1	%	5.0

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 14, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
% Moisture	Melbourne	Jan 12, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			

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Project Name: GLENLYON
Project ID: 20220348.001A

Order No.:
Report #: 854503
Phone: 03 9907 6000
Fax: 03 9907 6001

Received: Jan 11, 2022 12:02 PM
Due: Jan 18, 2022
Priority: 5 Day
Contact Name: Jeremy McDonnell

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						HOLD	Sample preparation - crushing	Polycyclic Aromatic Hydrocarbons	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217									
Brisbane Laboratory - NATA # 1261 Site # 20794									
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	SS27_1_0.0-0.1	Dec 15, 2022		Soil	M22-Ja05279			X	X
2	SS27_2_0.0-0.1	Dec 17, 2022		Soil	M22-Ja05280			X	X
3	SS27_3_0.0-0.1	Dec 19, 2022		Soil	M22-Ja05281			X	X
4	SS27_4_0.0-0.1	Dec 21, 2022		Soil	M22-Ja05282			X	X
5	SS27_5_0.0-0.1	Dec 23, 2022		Soil	M22-Ja05283			X	X
6	SS27_6_0.0-	Dec 25, 2021		Soil	M22-Ja05284			X	X

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Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217									
Brisbane Laboratory - NATA # 1261 Site # 20794									
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
	0.1								
7	SS15_1_0.0-0.1	Dec 27, 2022		Soil	M22-Ja05285			X	X
8	SS15_2_0.0-0.1	Dec 29, 2022		Soil	M22-Ja05286			X	X
9	SS15_3_0.0-0.1	Dec 31, 2022		Soil	M22-Ja05287			X	X
10	SS15_4_0.0-0.1	Jan 02, 2023		Soil	M22-Ja05288			X	X
11	SS15_5_0.0-0.1	Jan 04, 2023		Soil	M22-Ja05289			X	X
12	SS15_6_0.0-0.1	Jan 06, 2023		Soil	M22-Ja05290			X	X

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Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217									
Brisbane Laboratory - NATA # 1261 Site # 20794									
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
13	SS29_1_0.0-0.1	Jan 08, 2023		Soil	M22-Ja05291			X	X
14	SS29_2_0.0-0.1	Jan 10, 2023		Soil	M22-Ja05292			X	X
15	SS29_3_0.0-0.1	Jan 12, 2023		Soil	M22-Ja05293			X	X
16	SS29_4_0.0-0.1	Jan 14, 2023		Soil	M22-Ja05294			X	X
17	SS29_5_0.0-0.1	Jan 16, 2023		Soil	M22-Ja05295			X	X
18	SS29_6_0.0-0.1	Jan 18, 2023		Soil	M22-Ja05296			X	X
19	SW03_0.0._0.	Jan 20, 2023		Soil	M22-Ja05297			X	X

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Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217									
Brisbane Laboratory - NATA # 1261 Site # 20794									
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
	1								
20	QC01	Jan 21, 2023		Soil	M22-Ja05298			X	X
21	QC03	Jan 22, 2023		Soil	M22-Ja05299	X			
22	QC05	Jan 23, 2023		Water	M22-Ja05300			X	
23	SS27_1_0.4-0.5	Dec 16, 2022		Soil	M22-Ja05301	X			
24	SS27_2_0.4-0.5	Dec 18, 2022		Soil	M22-Ja05302	X			
25	SS27_3_0.4-0.5	Dec 20, 2022		Soil	M22-Ja05303	X			
26	SS27_4_0.4-0.5	Dec 22, 2022		Soil	M22-Ja05304	X			

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Sample Detail						HOLD	Sample preparation - crushing	Polycyclic Aromatic Hydrocarbons	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217									
Brisbane Laboratory - NATA # 1261 Site # 20794									
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
27	SS27_5_0.4-0.5	Dec 24, 2022		Soil	M22-Ja05305	X			
28	SS27_6_0.4-0.5	Dec 26, 2022		Soil	M22-Ja05306	X			
29	SS15_1_0.3-0.4	Dec 28, 2022		Soil	M22-Ja05307	X			
30	SS15_2_0.3-0.4	Dec 30, 2022		Soil	M22-Ja05308	X			
31	SS15_3_0.3-0.4	Jan 01, 2023		Soil	M22-Ja05309	X			
32	SS15_4_0.3-0.4	Jan 03, 2023		Soil	M22-Ja05310	X			
33	SS15_5_0.3-	Jan 05, 2023		Soil	M22-Ja05311	X			

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Sample Detail						HOLD	Sample preparation - crushing	Polycyclic Aromatic Hydrocarbons	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217									
Brisbane Laboratory - NATA # 1261 Site # 20794									
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
	0.4								
34	SS15_6_0.3-0.4	Jan 07, 2023		Soil	M22-Ja05312	X			
35	SS29_1_0.4-0.5	Jan 09, 2023		Soil	M22-Ja05313	X			
36	SS29_2_0.4-0.5	Jan 11, 2023		Soil	M22-Ja05314	X			
37	SS29_3_0.4-0.5	Jan 13, 2023		Soil	M22-Ja05315	X			
38	SS29_4_0.4-0.5	Jan 15, 2023		Soil	M22-Ja05316	X			
39	SS29_5_0.4-0.5	Jan 17, 2023		Soil	M22-Ja05317	X			

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Sample Detail						HOLD	Sample preparation - crushing	Polycyclic Aromatic Hydrocarbons	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217									
Brisbane Laboratory - NATA # 1261 Site # 20794									
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
40	SS29_6_0.4-0.5	Jan 19, 2023		Soil	M22-Ja05318	X			
41	s1	Dec 15, 2022		Solid	M22-Ja05339		X	X	X
Test Counts						19	1	22	21

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.4
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	85			70-130	Pass	
Acenaphthylene	%	86			70-130	Pass	
Anthracene	%	106			70-130	Pass	
Benz(a)anthracene	%	87			70-130	Pass	
Benzo(a)pyrene	%	105			70-130	Pass	
Benzo(b&j)fluoranthene	%	121			70-130	Pass	
Benzo(g.h.i)perylene	%	82			70-130	Pass	
Benzo(k)fluoranthene	%	101			70-130	Pass	
Chrysene	%	104			70-130	Pass	
Dibenz(a.h)anthracene	%	104			70-130	Pass	
Fluoranthene	%	94			70-130	Pass	
Fluorene	%	104			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	85			70-130	Pass	
Naphthalene	%	73			70-130	Pass	
Phenanthrene	%	116			70-130	Pass	
Pyrene	%	94			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M22-Ja05285	CP	%	100			70-130	Pass	
Acenaphthylene	M22-Ja05285	CP	%	99			70-130	Pass	
Anthracene	M22-Ja05285	CP	%	115			70-130	Pass	
Benz(a)anthracene	M22-Ja05285	CP	%	71			70-130	Pass	
Benzo(a)pyrene	M22-Ja05285	CP	%	87			70-130	Pass	
Benzo(b&j)fluoranthene	M22-Ja05285	CP	%	101			70-130	Pass	
Benzo(g.h.i)perylene	M22-Ja05285	CP	%	104			70-130	Pass	
Benzo(k)fluoranthene	M22-Ja05285	CP	%	120			70-130	Pass	
Chrysene	M22-Ja05285	CP	%	87			70-130	Pass	
Dibenz(a.h)anthracene	M22-Ja05285	CP	%	87			70-130	Pass	
Fluoranthene	M22-Ja05285	CP	%	108			70-130	Pass	
Fluorene	M22-Ja05285	CP	%	122			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Indeno(1.2.3-cd)pyrene	M22-Ja05285	CP	%	106			70-130	Pass	
Naphthalene	M22-Ja05285	CP	%	81			70-130	Pass	
Phenanthrene	M22-Ja05285	CP	%	91			70-130	Pass	
Pyrene	M22-Ja05285	CP	%	107			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M22-Ja05295	CP	%	93			70-130	Pass	
Acenaphthylene	M22-Ja05295	CP	%	94			70-130	Pass	
Anthracene	M22-Ja05295	CP	%	107			70-130	Pass	
Benz(a)anthracene	M22-Ja05295	CP	%	98			70-130	Pass	
Benzo(a)pyrene	M22-Ja05295	CP	%	120			70-130	Pass	
Benzo(b&j)fluoranthene	M22-Ja05295	CP	%	95			70-130	Pass	
Benzo(g.h.i)perylene	M22-Ja05295	CP	%	101			70-130	Pass	
Benzo(k)fluoranthene	M22-Ja05295	CP	%	109			70-130	Pass	
Chrysene	M22-Ja05295	CP	%	79			70-130	Pass	
Dibenz(a.h)anthracene	M22-Ja05295	CP	%	83			70-130	Pass	
Fluoranthene	M22-Ja05295	CP	%	92			70-130	Pass	
Fluorene	M22-Ja05295	CP	%	115			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M22-Ja05295	CP	%	101			70-130	Pass	
Naphthalene	M22-Ja05295	CP	%	78			70-130	Pass	
Phenanthrene	M22-Ja05295	CP	%	87			70-130	Pass	
Pyrene	M22-Ja05295	CP	%	94			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M22-Ja05279	CP	%	26	26	1.0	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M22-Ja05284	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M22-Ja05289	CP	%	16	19	19	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(b&j)fluoranthene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M22-Ja05294	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Callum McEwan	Analytical Services Manager
Joseph Edouard	Senior Analyst-Organic (VIC)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Client:	SITE, COC AND CONTACT DATA				Laboratory:
Kleinfelder Australia Pty Ltd	*Site Name:*	Glenlyon	*Sampler Name:*	Matt Kiraz	Eurofins|mgt
Level 1, 95 Coventry Street	*QUOTE NUMBER*		*Contact Number:*	467789650	6 Monterey Road
South Melbourne	*Job No.:*	20220348.001A	*Contact e-mail:*	mkiraz@kleinfelder.com	Dandenong South
VIC 3205	*Required TAT:*	24 hrs 48 hrs 3 days 5days 7 days	*PM name (if not sampler):*	Jeremy McDonnell	VIC 3175
Phone: 03 9907 6000	*Data QA level:*	LAB minimum unless specified:	*PM e-mail:*	jmcdonnell@kleinfelder.com	Phone: (03) 8564 5000 Fax: (03) 8564 5090

CHAIN OF CUSTODY							Send Results to:
Relinquished by (print):		*Received by (print):*		*Relinquished:*		*Received by:*	
(sign)		*(sign)*		*(sign)*		*(sign)*	
Date / Time:		*Date / Time:*		*Date / Time:*		*Date / Time:*	Level 1, 95 Coventry Street
Notes:		*Temp. (°C)*		*Notes:*		*Temp. (°C)*	South Melbourne, VIC 3205
		Notes:	ice present / no ice seals intact / no seal			*Notes:* ice present / no ice seals intact / no seal	melbournelab@kleinfelder.com Phone: 03 9907 6000

Sample ID	Lab ID	Sample Point	Sample Type	Date	Start Depth	End Depth	Units	# Containers	Organic Analytes: PAH	Organic Analytes: HOLD	Metals	Other Analytes	Comments
SS27_1_0.0_0.1			Soil	16/12/2021				1	X				
SS27_1_0.4_0.5			Soil	16/12/2021				1		X			
SS27_2_0.0_0.1			Soil	16/12/2021				1	X				
SS27_2_0.4_0.5			Soil	16/12/2021				1		X			
SS27_3_0.0_0.1			Soil	16/12/2021				1	X				
SS27_3_0.4_0.5			Soil	16/12/2021				1		X			
SS27_4_0.0_0.1			Soil	16/12/2021				1	X				
SS27_4_0.4_0.5			Soil	16/12/2021				1		X			
SS27_5_0.0_0.1			Soil	16/12/2021				1	X				
SS27_5_0.4_0.5			Soil	16/12/2021				1		X			
SS27_6_0.0_0.1			Soil	16/12/2021				1	X				
SS27_6_0.4_0.5			Soil	16/12/2021				1		X			
SS15_1_0.0-0.1			Soil	16/12/2021				1	X				
SS15_1_0.3-0.4			Soil	16/12/2021				1		X			
SS15_2_0.0-0.1			Soil	16/12/2021				1	X				
SS15_2_0.3-0.4			Soil	16/12/2021				1		X			
SS15_3_0.0-0.1			Soil	16/12/2021				1	X				
SS15_3_0.3-0.4			Soil	16/12/2021				1		X			

Dulloran 854503

CHAIN OF CUSTODY

Relinquished by (print):		*Received by (print):*		*Relinquished:*		*Received by:*		Send Results to:
(sign)		*(sign)*		*(sign)*		*(sign)*		Level 1, 95 Coventry Street
Date / Time:		*Date / Time:*		*Date / Time:*		*Date / Time:*		South Melbourne, VIC 3205
Notes:		*Temp. (°C)*		*Notes:*		*Temp. (°C)*		melbournelab@kleinfelder.com
		Notes:	ice present / no ice seals intact / no seal			*Notes:*	ice present / no ice seals intact / no seal	Phone: 03 9907 6000

Sample ID	Lab ID	Sample Point	Sample Type	Date	Start Depth	End Depth	Units	# Containers	Organic Analytes									Metals			Other Analytes					Comments
									PAH	HOLD																
SS15_4_0.0-0.1			Soil	16/12/2021				1	X																	
SS15_4_0.3-0.4			Soil	16/12/2021				1		X																
SS15_5_0.0-0.1			Soil	16/12/2021				1	X																	
SS15_5_0.3-0.4			Soil	16/12/2021				1		X																
SS15_6_0.0-0.1			Soil	16/12/2021				1	X																	
SS15_6_0.3-0.4			Soil	16/12/2021				1		X																
SS29_1_0.0_0.1			Soil	16/12/2021				1	X																	
SS29_1_0.4_0.5			Soil	16/12/2021				1		X																
SS29_2_0.0_0.1			Soil	16/12/2021				1	X																	
SS29_2_0.4_0.5			Soil	16/12/2021				1		X																
SS29_3_0.0_0.1			Soil	16/12/2021				1	X																	
SS29_3_0.4_0.5			Soil	16/12/2021				1		X																
SS29_4_0.0_0.1			Soil	16/12/2021				1	X																	
SS29_4_0.4_0.5			Soil	16/12/2021				1		X																
SS29_5_0.0_0.1			Soil	16/12/2021				1	X																	
SS29_5_0.4_0.5			Soil	16/12/2021				1		X																
SS29_6_0.0_0.1			Soil	16/12/2021				1	X																	
SS29_6_0.4_0.5			Soil	16/12/2021				1		X																
SW03_0.0_0.1			Soil	16/12/2021				1	X	X																
S1			Clay Fragme	16/12/2021				1	X																	
QC01			Soil	16/12/2021				1	X																	
QC02			Soil	16/12/2021				1	X																	**PLEASE FORWARD TO ALS**
QC03			Soil	16/12/2021				1		X																

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CHAIN OF CUSTODY

Relinquished by (print):		*Received by (print):*		*Relinquished:*		*Received by:*	
(sign)		*(sign)*		*(sign)*		*(sign)*	
Date / Time:		*Date / Time:*		*Date / Time:*		*Date / Time:*	
Notes:		*Temp.* (°C)		*Notes:*		*Temp.* (°C)	
		Notes:	ice present / no ice seals intact / no seal			*Notes:*	ice present / no ice seals intact / no seal

Send Results to:

Level 1, 95 Coventry Street
South Melbourne, VIC 3205

melbournelab@kleinfelder.com
Phone: 03 9907 6000

Sample ID	Lab ID	Sample Point	Sample Type	Date	Start Depth	End Depth	Units	# Containers	Organic Analytes								Metals			Other Analytes					Comments
									PAH	HOLD															
QC04			Soil	16/12/2021				1		X															PLEASE FORWARD TO ALS
QC05			Water	16/12/2021				3	X																

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CHAIN OF CUSTODY

Relinquished by (print):		*Received by (print):*		*Relinquished:*		*Received by:*	
(sign)		*(sign)*		*(sign)*		*(sign)*	
Date / Time:		*Date / Time:*		*Date / Time:*		*Date / Time:*	
Notes:		*Temp.* (°C)		*Notes:*		*Temp.* (°C)	
		Notes:	ice present / no ice seals intact / no seal			*Notes:*	ice present / no ice seals intact / no seal

Send Results to:

Level 1, 95 Coventry Street
South Melbourne, VIC 3205

melbournelab@kleinfelder.com
Phone: 03 9907 6000

Sample ID	Lab ID	Sample Point	Sample Type	Date	Start Depth	End Depth	Units	# Containers	Organic Analytes								Metals			Other Analytes					Comments
									PAH	TOLD															
SS15_4_0.0-0.1			Soil	16/12/2021				1	X																
SS15_4_0.3-0.4			Soil	16/12/2021				1		X															
SS15_5_0.0-0.1			Soil	16/12/2021				1	X																
SS15_5_0.3-0.4			Soil	16/12/2021				1		X															
SS15_6_0.0-0.1			Soil	16/12/2021				1	X																
SS15_6_0.3-0.4			Soil	16/12/2021				1		X															
SS29_1_0.0_0.1			Soil	16/12/2021				1	X																
SS29_1_0.4_0.5			Soil	16/12/2021				1		X															
SS29_2_0.0_0.1			Soil	16/12/2021				1	X																
SS29_2_0.4_0.5			Soil	16/12/2021				1		X															
SS29_3_0.0_0.1			Soil	16/12/2021				1	X																
SS29_3_0.4_0.5			Soil	16/12/2021				1		X															
SS29_4_0.0_0.1			Soil	16/12/2021				1	X																
SS29_4_0.4_0.5			Soil	16/12/2021				1		X															
SS29_5_0.0_0.1			Soil	16/12/2021				1	X																
SS29_5_0.4_0.5			Soil	16/12/2021				1		X															
SS29_6_0.0_0.1			Soil	16/12/2021				1	X																
SS29_6_0.4_0.5			Soil	16/12/2021				1		X															
SW03_0.0_0.1			Soil	16/12/2021				1	X	X															
S1			Clay Fragme	16/12/2021				1	X																
QC01			Soil	16/12/2021				1	X																
QC02			Soil	16/12/2021				1	X																PLEASE FORWARD TO ALS
QC03			Soil	16/12/2021				1		X															

COPY

3

Sulfonah 854503

CHAIN OF CUSTODY

Relinquished by (print):		*Received by (print):*		*Relinquished:*		*Received by:*	
(sign)		*(sign)*		*(sign)*		*(sign)*	
Date / Time:		*Date / Time:*		*Date / Time:*		*Date / Time:*	
Notes:		*Temp. (°C)*		*Notes:*		*Temp. (°C)*	
		Notes:	ice present / no ice seals intact / no seal			*Notes:*	ice present / no ice seals intact / no seal

Send Results to:

Level 1, 95 Coventry Street
South Melbourne, VIC 3205

melbournelab@kleinfelder.com
Phone: 03 9907 6000

Sample ID	Lab ID	Sample Point	Sample Type	Date	Start Depth	End Depth	Units	# Containers	Organic Analytes								Metals			Other Analytes					Comments
									PAH	HOLD															
QC04			Soil	16/12/2021				1		X															PLEASE FORWARD TO ALS
QC05			Water	16/12/2021				3	X																

COPY

3

Sullenah 854503

RE: Esky Pickup

Jeremy McDonnell <JMcDonnell@Kleinfelder.com>

Tue 11/01/2022 12:02 PM

To: Callum McEwan <CallumMcEwan@eurofins.com>; #AU_CAU001_EnviroSampleVic <EnviroSampleVic@eurofins.com>

Cc: Matt Kiraz <MKiraz@kleinfelder.com>; Harry Bacalis <HarryBacalis@eurofins.com>

EXTERNAL EMAIL*

Hi Callum,

Please find attached the COC including the requested analysis of the samples previously collected and currently on hold at the lab.

Regards,

Jeremy McDonnell, BSc, MEnvSus
Project Manager

Level 1, 95 Coventry St
South Melbourne, VIC 3205
o| + (61) 3 9907 6000
d| + (61) 3 9900 0036
m| + (61) 408 156 078

From: Jeremy McDonnell
Sent: Tuesday, 4 January 2022 11:31 AM
To: #AU_CAU001_EnviroSampleVic <EnviroSampleVic@eurofins.com>; Callum McEwan <CallumMcEwan@eurofins.com>; Matt Kiraz <MKiraz@kleinfelder.com>
Cc: Harry Bacalis <HarryBacalis@eurofins.com>
Subject: RE: Esky Pickup

Hi Callum,

Thanks for the call last week.

As discussed, we will send through the analytical request for the soil samples as soon as possible.

In the meantime, please continue to keep these samples on hold.

Deborah 854503

eurofins | Environment Testing

PROJECT INFORMATION

Date Received: 17/12/21 - 5.29 pm

Company: –

Contact person: –

Contact Number:

Contact E-mail: –

Project Name/site: Glenlyon

Project Number: 2eskies CT

COC: Attached ☐
E-mailed ☐
Not received ☐

Date/Time:
Chilled: (Yes)/No
Temp: 6.3
+0.5
Correction: 6.8
Final Temp:

Coeurie

Last modified on: 16 October 2019	Approved on: 16 October 2019	Version: QS1039_R2
Last modified by: H. Le	Approver: M. Makarios	Page 1 of 1
Editorial Committee: T. Lakeland, F. Sanjaya, H. Le, M. Makarios		Next required review date: 16 October 2022

Sulloran 854503

Kleinfelder Australia Pty Ltd (VIC)
Level 1, 95 Coventry St
South Melbourne
VIC 3205

Attention: **Jeremy McDonnell**

Report **851670-W-V2**
Project name GLENLYON EMP
Project ID 20223763.001A
Received Date Dec 17, 2021

Client Sample ID			**SW01_1**	**SW01_2**	**SW02**	**SW03**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M21-De46405**	**M21-De46406**	**M21-De46407**	**M21-De46408**
Date Sampled			**Dec 16, 2021**	**Dec 16, 2021**	**Dec 16, 2021**	**Dec 16, 2021**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	88	86	86	109
p-Terphenyl-d14 (surr.)	1	%	118	110	120	106
Ammonia (as N)	0.01	mg/L	< 0.01	0.02	0.04	0.10
Chloride	1	mg/L	13	13	13	46
Nitrate & Nitrite (as N)	0.05	mg/L	0.23	0.23	0.24	< 0.05
Nitrate (as N)	0.02	mg/L	0.23	0.23	0.24	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.01	0.01	0.01	0.13
Sulphate (as SO4)	5	mg/L	< 5	< 5	< 5	< 5
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	91	150	120	390
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.9	0.4	< 0.2	3.4
Total Nitrogen (as N)*	0.2	mg/L	1.13	0.63	0.24	3.4
Total Suspended Solids Dried at 103–105°C	5	mg/L	5.2	< 5	< 5	41
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	50	47	51	320
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	13

Client Sample ID			SW01_1	SW01_2	SW02	SW03
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-De46405	M21-De46406	M21-De46407	M21-De46408
Date Sampled			Dec 16, 2021	Dec 16, 2021	Dec 16, 2021	Dec 16, 2021
Test/Reference	LOR	Unit				
Alkali Metals						
Calcium	0.5	mg/L	3.8	3.8	3.8	25
Magnesium	0.5	mg/L	4.6	4.7	4.6	26
Potassium	0.5	mg/L	1.0	1.0	1.0	1.7
Sodium	0.5	mg/L	12	12	12	77
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.004
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.001
Copper (filtered)	0.001	mg/L	0.001	< 0.001	< 0.001	0.005
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.003
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.004
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	0.006

Client Sample ID			SW04	SW05	QC01	QC02
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-De46409	M21-De46410	M21-De46411	M21-De46412
Date Sampled			Dec 16, 2021	Dec 16, 2021	Dec 16, 2021	Dec 16, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	83	81	90	70
p-Terphenyl-d14 (surr.)	1	%	65	77	77	56
Ammonia (as N)	0.01	mg/L	0.05	0.02	0.03	-
Chloride	1	mg/L	61	13	13	-
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	0.24	0.24	-
Nitrate (as N)	0.02	mg/L	< 0.02	0.24	0.23	-
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Phosphate total (as P)	0.01	mg/L	0.01	0.01	0.03	-
Sulphate (as SO4)	5	mg/L	< 5	< 5	< 5	-
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	850	61	37	-
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	0.8	-

Client Sample ID			SW04	SW05	QC01	QC02
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-De46409	M21-De46410	M21-De46411	M21-De46412
Date Sampled			Dec 16, 2021	Dec 16, 2021	Dec 16, 2021	Dec 16, 2021
Test/Reference	LOR	Unit				
Total Nitrogen (as N)*	0.2	mg/L	< 0.2	0.24	1.04	-
Total Suspended Solids Dried at 103–105°C	5	mg/L	8.2	22	8.9	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	790	51	52	-
Carbonate Alkalinity (as CaCO3)	10	mg/L	55	< 10	< 10	-
Alkali Metals						
Calcium	0.5	mg/L	54	3.9	3.9	-
Magnesium	0.5	mg/L	78	4.8	4.9	-
Potassium	0.5	mg/L	2.6	1.1	1.0	-
Sodium	0.5	mg/L	150	12	13	-
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Nickel (filtered)	0.001	mg/L	0.002	< 0.001	< 0.001	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			RINSATE
Sample Matrix			Water
Eurofins Sample No.			M21-De46413
Date Sampled			Dec 16, 2021
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	76
p-Terphenyl-d14 (surr.)	1	%	84

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Melbourne	Dec 21, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Suspended Solids Dried at 103–105°C	Melbourne	Dec 21, 2021	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Heavy Metals (filtered)	Melbourne	Jan 10, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, Total P			
Ammonia (as N)	Melbourne	Dec 21, 2021	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Dec 21, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	Dec 21, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	Dec 21, 2021	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Phosphate total (as P)	Melbourne	Dec 21, 2021	28 Days
- Method: LTM-INO-4040 Phosphate by CFA			
Total Kjeldahl Nitrogen (as N)	Melbourne	Dec 21, 2021	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Major Anions			
Chloride	Melbourne	Dec 21, 2021	28 Days
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Sulphate (as SO4)	Melbourne	Dec 21, 2021	28 Days
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Alkalinity (speciated)	Melbourne	Dec 21, 2021	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Total Dissolved Solids Dried at 180°C ± 2°C	Melbourne	Dec 21, 2021	28 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			
Major Cations			
Alkali Metals	Melbourne	Jan 10, 2022	180 Days
- Method: LTM-MET-3010 Alkali Metals Sulfur Silicon Phosphorus by ICP-AES			

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Project Name: GLENLYON EMP
Project ID: 20223763.001A

Order No.:
Report #: 851670
Phone: 03 9907 6000
Fax: 03 9907 6001

Received: Dec 17, 2021 5:29 PM
Due: Jan 6, 2022
Priority: 10 Day
Contact Name: Jeremy McDonnell

Eurofins Analytical Services Manager : Michael Cassidy

Sample Detail						Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Nickel (filtered)	Total Suspended Solids Dried at 103–105°C	Zinc (filtered)	Polycyclic Aromatic Hydrocarbons	Major Anions	Major Cations	Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, Total P	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																		
Brisbane Laboratory - NATA # 1261 Site # 20794																		
Mayfield Laboratory - NATA # 1261 Site # 25079																		
Perth Laboratory - NATA # 2377 Site # 2370																		
External Laboratory																		
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
1	SW01_1	Dec 16, 2021		Water	M21-De46405	X	X	X	X	X	X	X	X	X	X	X	X	X
2	SW01_2	Dec 16, 2021		Water	M21-De46406	X	X	X	X	X	X	X	X	X	X	X	X	X
3	SW02	Dec 16, 2021		Water	M21-De46407	X	X	X	X	X	X	X	X	X	X	X	X	X
4	SW03	Dec 16, 2021		Water	M21-De46408	X	X	X	X	X	X	X	X	X	X	X	X	X
5	SW04	Dec 16, 2021		Water	M21-De46409	X	X	X	X	X	X	X	X	X	X	X	X	X
6	SW05	Dec 16, 2021		Water	M21-De46410	X	X	X	X	X	X	X	X	X	X	X	X	X
7	QC01	Dec 16, 2021		Water	M21-De46411	X	X	X	X	X	X	X	X	X	X	X	X	X
8	QC02	Dec 16, 2021		Water	M21-De46412	X	X	X	X	X	X		X	X				
9	RINSATE	Dec 16, 2021		Water	M21-De46413									X				

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Eurofins Analytical Services Manager : Michael Cassidy

Sample Detail	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Nickel (filtered)	Total Suspended Solids Dried at 103–105°C	Zinc (filtered)	Polycyclic Aromatic Hydrocarbons	Major Anions	Major Cations	Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, Total P	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA # 1261 Site # 1254	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217													
Brisbane Laboratory - NATA # 1261 Site # 20794													
Mayfield Laboratory - NATA # 1261 Site # 25079													
Perth Laboratory - NATA # 2377 Site # 2370													
External Laboratory													
Test Counts	10	10	10	10	10	10	7	10	9	7	7	7	7

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.4
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	94			70-130	Pass	
Acenaphthylene	%	78			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Anthracene	%	77			70-130	Pass	
Benz(a)anthracene	%	87			70-130	Pass	
Benzo(a)pyrene	%	80			70-130	Pass	
Benzo(b&j)fluoranthene	%	95			70-130	Pass	
Benzo(g.h.i)perylene	%	103			70-130	Pass	
Benzo(k)fluoranthene	%	84			70-130	Pass	
Chrysene	%	107			70-130	Pass	
Dibenz(a.h)anthracene	%	89			70-130	Pass	
Fluoranthene	%	83			70-130	Pass	
Fluorene	%	92			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	103			70-130	Pass	
Naphthalene	%	94			70-130	Pass	
Phenanthrene	%	95			70-130	Pass	
Pyrene	%	109			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	109			70-130	Pass	
Chloride	%	107			70-130	Pass	
Nitrate & Nitrite (as N)	%	100			70-130	Pass	
Nitrate (as N)	%	100			70-130	Pass	
Nitrite (as N)	%	105			70-130	Pass	
Phosphate total (as P)	%	100			70-130	Pass	
Sulphate (as SO4)	%	82			70-130	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	%	100			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	123			70-130	Pass	
Total Suspended Solids Dried at 103–105°C	%	89			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	116			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	111			80-120	Pass	
Magnesium	%	107			80-120	Pass	
Potassium	%	103			80-120	Pass	
Sodium	%	96			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S21-De25094	NCP	%	91			70-130	Pass	
Acenaphthylene	S21-De25094	NCP	%	99			70-130	Pass	
Anthracene	S21-De25094	NCP	%	84			70-130	Pass	
Benz(a)anthracene	S21-De25094	NCP	%	107			70-130	Pass	
Benzo(a)pyrene	S21-De25094	NCP	%	113			70-130	Pass	
Benzo(b&j)fluoranthene	S21-De25094	NCP	%	124			70-130	Pass	
Benzo(g.h.i)perylene	S21-De25094	NCP	%	80			70-130	Pass	
Benzo(k)fluoranthene	S21-De25094	NCP	%	110			70-130	Pass	
Chrysene	S21-De25094	NCP	%	107			70-130	Pass	
Dibenz(a.h)anthracene	S21-De25094	NCP	%	88			70-130	Pass	
Fluoranthene	S21-De25094	NCP	%	111			70-130	Pass	
Fluorene	S21-De25094	NCP	%	95			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S21-De25094	NCP	%	94			70-130	Pass	
Naphthalene	S21-De25094	NCP	%	110			70-130	Pass	
Phenanthrene	S21-De25094	NCP	%	116			70-130	Pass	
Pyrene	S21-De25094	NCP	%	122			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
				Result 1					
Ammonia (as N)	M21-De46405	CP	%	110			70-130	Pass	
Nitrate & Nitrite (as N)	M21-De46405	CP	%	99			70-130	Pass	
Nitrate (as N)	M21-De46405	CP	%	99			70-130	Pass	
Nitrite (as N)	M21-De46405	CP	%	106			70-130	Pass	
Phosphate total (as P)	M21-De46405	CP	%	92			70-130	Pass	
Sulphate (as SO4)	M21-De38259	NCP	%	95			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	S21-De44431	NCP	%	128			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S21-De48766	NCP	%	104			75-125	Pass	
Magnesium	S21-De48766	NCP	%	99			75-125	Pass	
Potassium	S21-De48766	NCP	%	103			75-125	Pass	
Sodium	M21-De46405	CP	%	88			75-125	Pass	
Spike - % Recovery									
				Result 1					
Total Suspended Solids Dried at 103–105°C	M21-De46411	CP	%	92			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Sodium	M21-De46412	CP	%	81			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M21-De45492	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M21-De45496	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Chloride	M21-De46405	CP	mg/L	13	13	2.0	30%	Pass	
Nitrate & Nitrite (as N)	M21-De46405	CP	mg/L	0.23	0.23	1.0	30%	Pass	
Nitrate (as N)	M21-De46405	CP	mg/L	0.23	0.22	2.0	30%	Pass	
Nitrite (as N)	M21-De46405	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phosphate total (as P)	N21-De38854	NCP	mg/L	0.07	0.07	1.0	30%	Pass	
Sulphate (as SO4)	M21-De46405	CP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	M21-De39001	NCP	mg/L	< 20	< 20	<1	30%	Pass	
Carbonate Alkalinity (as CaCO3)	M21-De39001	NCP	mg/L	< 10	< 10	<1	30%	Pass	

Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S21-De48766	NCP	mg/L	25	26	5.0	30%	Pass	
Magnesium	S21-De48766	NCP	mg/L	14	15	5.0	30%	Pass	
Potassium	S21-De48766	NCP	mg/L	130	140	6.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Suspended Solids Dried at 103–105°C	M21-De46406	CP	mg/L	< 5	< 5	<1	30%	Pass	

Comments

This report has been revised (V2) following repeat analysis. Test (Metals) results for sample (SW03 (De46408)) have now been replaced by the repeat results.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Michael Cassidy	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

KLEINFELDER AUSTRALIA PTY LTD

COC number:

KLEINFELDER
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Client:	SITE, COC AND CONTACT DATA				Laboratory:
Kleinfelder Australia Pty Ltd **Level 1, 95 Coventry Street** **South Melbourne** **VIC 3205** **Phone: 03 9907 6000**	*Site Name:*	Glenlyon EMP	*Sampler Name:*	Matt Kiraz	Eurofins|mgt 6 Monterey Road Dandenong South VIC 3175 Phone: (03) 8564 5000 Fax: (03) 8564 5090
	QUOTE NUMBER		*Contact Number:*	467789650	
	Job No.:	20223763.001A	*Contact e-mail:*	mkiraz@kleinfelder.com	
	Required TAT:	24 hrs 48 hrs 3 days 5days 7 days	*PM name (if not sampler)*	Jeremy McDonnell	
	Data QA level:	LAB minimum unless specified:	*PM e-mail:*	jmcdonnell@kleinfelder.com	

CHAIN OF CUSTODY						Send Results to:
Relinquished by (print):		*Received by (print):*		*Relinquished:*		*Received by:*		
(sign)		*(sign)*		*(sign)*		*(sign)*		Level 1, 95 Coventry Street South Melbourne, VIC 3205
Date / Time:		*Date / Time:*		*Date / Time:*		*Date / Time:*		
Notes:		*Temp. (°C)* *Notes:*	ice present / no ice seals intact / no seal	*Notes:*		*Temp. (°C)* *Notes:*	ice present / no ice seals intact / no seal	melbournelab@kleinfelder.com Phone: 03 9907 6000

Sample ID	Lab ID	Sample Point	Sample Type	Date	Start Depth	End Depth	Units	# Containers	Organic Analytes									Metals			Other Analytes					Comments
									PAH	Nutrients	Cations/Anions	TDS & TSS	Metals (As, Cd, Cr, Cu, Pb, Ni, Zn)													
SW01_1				16/12/2021				4	X	X	X	X	X													
SW01_2				16/12/2021				4	X	X	X	X	X													
SW02				16/12/2021				4	X	X	X	X	X													
SW03				16/12/2021				4	X	X	X	X	X													
SW05				16/12/2021				4	X	X	X	X	X													
SW06				16/12/2021				4	X	X	X	X	X													
QC01				16/12/2021				4	X	X	X	X	X													
QC02				16/12/2021				4	X				X													
Rinsate				16/12/2021				3	X																	

851670

RE: Esky Pickup

Harry Bacalis <HarryBacalis@eurofins.com>
Fri 17/12/2021 11:45 AM
To: Matt Kiraz <MKiraz@kleinfelder.com>
Cc: Jeremy McDonnell <JMcDonnell@Kleinfelder.com>; #AU_CAU001_EnviroSampleVic <EnviroSampleVic@eurofins.com>
Thanks Matt

Canh – Incoming Samples, COC attached

Kind regards,

Harry Bacalis
Phone: +61 3 8564 5064
Mobile: +61 438 858 924
Email : HarryBacalis@eurofins.com

From: Matt Kiraz <MKiraz@kleinfelder.com>
Sent: Friday, 17 December 2021 10:48 AM
To: Harry Bacalis <HarryBacalis@eurofins.com>
Cc: Jeremy McDonnell <JMcDonnell@Kleinfelder.com>
Subject: RE: Esky Pickup

EXTERNAL EMAIL*

Thanks for that Harry.

Please find attached COCs for the samples arriving today. All soils are on HOLD, we will be able to send you an updated COC with analysis for these next week.

Kind regards,

Matt Kiraz
Environmental Scientist

Level 1, 95 Coventry St
South Melbourne, VIC 3205
o| + (61) 3 9907 6000
m| + (61) 467 789 650

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801620

eurofins | Environment Testing

PROJECT INFORMATION

Date Received: 17/12/21 - 5.29 pm

Company: -

Contact person: -

Contact Number:

Contact E-mail: -

Project Name/site: Glenlyon

Project Number:

2 eskies
CT

COC: Attached ☐
E-mailed ☐
Not received ☐

Date/Time:
Chilled: Yes / No
Temp: 6.3
+0.5
Correction: 6.8
Final Temp:

Coeurie

27/12

Last modified on: 16 October 2019	Approved on: 16 October 2019	Version: QS1039_R2
Last modified by: H. Le	Approver: M. Makarios	Page 1 of 1
Editorial Committee: T. Lakeland, F. Sanjaya, H. Le, M. Makarios		Next required review date: 16 October 2022

RE: Eurofins Test Results, Invoice - Report 851670 : Site GLENLYON EMP (20223763.001A)

Matt Kiraz <MKiraz@kleinfelder.com>
Tue 4/01/2022 11:31 AM
To: #AU_CAU001_EnviroSampleVic <EnviroSampleVic@eurofins.com>
Cc: Jeremy McDonnell <JMcDonnell@Kleinfelder.com>

EXTERNAL EMAIL*

COPY

To whom it may concern,

I made a mistake with the first COC. The QC02 was meant to go to ALS for secondary analysis. Could you please forward the samples with the COC attached to them as soon as possible.

Kind regards,

De46412-GT 8625 - 30/GT956-N

Matt Kiraz
Environmental Scientist

Level 1, 95 Coventry St
South Melbourne, VIC 3205
o| + (61) 3 9907 6000
m| + (61) 467 789 650

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From: HarryBacalis@eurofins.com <HarryBacalis@eurofins.com>
Sent: Wednesday, 29 December 2021 5:23 PM
To: Jeremy McDonnell <JMcDonnell@Kleinfelder.com>
Cc: Melbournelab <MelbourneLab@kleinfelder.com>; Matt Kiraz <MKiraz@kleinfelder.com>
Subject: Eurofins Test Results, Invoice - Report 851670 : Site GLENLYON EMP (20223763.001A)

External Email

Please find attached results and invoice for your project in the subject header.

Kind regards,

Harry Bacalis

KLEINFELDER AUSTRALIA PTY LTD

Page 1 of 1

COC number:

KLEINFELDER
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1

Client:	SITE, COC AND CONTACT DATA				Laboratory:
Kleinfelder Australia Pty Ltd Level 1, 95 Coventry Street South Melbourne VIC 3205 Phone: 03 9907 6000	Site Name:	Glenlyon EMP	Sampler Name:	Matt Kiraz	Eurofins|mgt 6 Monterey Road Dandenong South VIC 3175 Phone: (03) 8564 5000 Fax: (03) 8564 5090
	QUOTE NUMBER		Contact Number:	467789650	
	Job No.:	20223763.001A	Contact e-mail:	mkiraz@kleinfelder.com	
	Required TAT:	24 hrs 48 hrs 3 days 5days 7 days	PM name (if not sampler):	Jeremy McDonnell	
	Data QA level:	LAB minimum unless specified:	PM e-mail:	mcdonnell@kleinfelder.com	

CHAIN OF CUSTODY									Send Results to:
Relinquished by (print):		Received by (print):		Relinquished:		Received by			
(sign)		(sign)		(sign)		(sign)			Level 1, 95 Coventry Street South Melbourne, VIC 3205
Date / Time:		Date / Time:		Date / Time:		Date / Time:			
Notes:		Temp. (°C) Notes:	ice present / no ice seals intact / no seal	Notes:		Temp. (°C) Notes:	ice present / no ice seals intact / no seal		melbournelab@kleinfelder.com Phone: 03 9907 6000

Sample ID	Lab ID	Sample Point	Sample Type	Date	Start Depth	End Depth	Units	# Containers	Organic Analytes									Metals			Other Analytes						Comments
									PAH	Nutrients	Cations/Anions	TDS & TSS	Metals (As, Cd, Cr, Cu, Pb, Ni, Zn)														
SW01_1				16/12/2021				4	X	X	X	X	X														
SW01_2				16/12/2021				4	X	X	X	X	X														
SW02				16/12/2021				4	X	X	X	X	X														
SW03				16/12/2021				4	X	X	X	X	X														
SW05				16/12/2021				4	X	X	X	X	X														
SW06				16/12/2021				4	X	X	X	X	X														
QC01				16/12/2021				4	X	X	X	X	X														
QC02				16/12/2021				4	X	X	X	X	X														
Rinsate				16/12/2021				3	X				X														

COPY

851670

APPENDIX C1: NEPM HIL C CALCULATION SPREADSHEET (365 DAYS/YEAR)

Derivation of Investigation Levels
HIL C - Recreational

Summary of Exposure Parameters		Abbreviation	units	Parameter	References/Notes
Soil and Dust Ingestion Rate	- Young children (0-5 years)	IR_{SC}	mg/day	50	50% of HIL A assumption, Schedule B7, Table 5
	- Adults	IR_{SA}	mg/day	25	50% of HIL A assumption, Schedule B7, Table 5
Surface Area of Skin	- Young children (0-5 years)	SA_C	cm^2/day	2700	As per enHealth (2012)
	- Adults	SA_A	cm^2/day	6300	As per enHealth (2012) for male and female combined
Soil-to-Skin Adherence Factor		AF	mg/cm^2/day	0.5	Schedule B7, Table 5
Time Spent Outdoors		ETo	hours	2	Schedule B7, Table 5
Time Spent Indoors		ETi	hours	0	Schedule B7, Table 5
Lung Retention Factor		RF	-	0.375	Schedule B7, Table 5
Particulate Emission Factor		PEFo	(m^3/kg)	2.6E+07	As per Equation 21 based assumptions presented in Schedule B7
Outdoor Air-to-Soil Gas Attenuation Factor		α	-	0.05	Value adopted as discussed in Section 5.5 of Schedule B7
Body weight	- Young children (0-5 years)	BW_C	kg	15	Schedule B7, Table 5
	- Adults	BW_A	kg	70	Schedule B7, Table 5
Exposure Frequency		EF	days/year	365	Schedule B7, Table 5
Exposure Duration	- Young children (0-5 years)	ED_C	years	6	Schedule B7, Table 5
	- Adults	ED_A	years	29	Schedule B7, Table 5
Averaging Time (non-carcinogenic)		AT_T	days	ED*365	Calculated based on ED for each relevant age group, multiplied by 24 hours for the assessment of inhalation exposures
Averaging Time (carcinogenic)		AT_{NT}	days	25550	Based on lifetime of 70 years, multiplied by 24 hours for the assessment of inhalation exposures

Threshold Calculations - Young Child Aged 2-3 years

Compound	Toxicity Reference Value Oral (TRV_O) (mg/kg/day)	GI Absorption (GAF) (unitless)	Toxicity Reference Value Dermal (TRV_D) (mg/kg/day)	Oral Bioavailability BA_O (%)	Dermal Absorption Factor (DAF) (unitless)	Background Intake Oral/Dermal (BI_O) (% of TDI)	Toxicity Reference Value Inhalation (TRV_I) (mg/m^3)	Background Intake Inhalation (BIi) (% of TC)		Pathway Specific HILs (mg/kg)			Soil Vapour HIL (mg/m^3) (eqn 12)	Derived Interim Soil Gas HIL - Threshold (to 1 or 2 s.f.) (mg/m3)	Derived Soil HIL (not rounded) (mg/kg) (eqn 2 for relevant pathways)	Derived Soil HIL (to 1 or 2 s.f.) (mg/kg)	Notes
										Soil Ingestion (eqn 3)	Dermal (eqn 6)	Dust (eqn 9)					
arsenic	0.002	1	0.002	100%	0.005	50%	0.001	0%		3.0E+02	2.2E+03	8.2E+05			264	**300**	
beryllium	0.002	0.007	0.000014	100%	0.001	30%	0.000020	0%		4.2E+02	1.1E+02	1.6E+04			86	**90**	
boron	0.2			100%		65%	0.7	65%		2.1E+04	NA	2.0E+08			20998	**20000**	
cadmium	0.0008			100%		60%	0.000005	20%		9.6E+01	NA	3.3E+03			93	**90**	
chromium (VI)	0.001			100%		10%	0.0001	0%		2.7E+02	NA	8.2E+04			269	**300**	
cobalt	0.001	1	0.0014	100%	0.001	20%	0.0001	0%		3.4E+02	1.2E+04	8.2E+04			326	**300**	
copper	0.14			100%		60%	0.49	60%		1.7E+04	NA	1.6E+08			16798	**17000**	
manganese	0.16			100%		50%	0.00015	20%		2.4E+04	NA	9.8E+04			19296	**19000**	
methyl mercury	0.00023	1	0.00023	100%	0.001	80%	0.000805	80%		1.4E+01	5.1E+02	1.3E+05			13	**13**	
mercury (inorganic)	0.0006	0.07	0.000042	100%	0.001	40%	0.0002	10%		1.1E+02	2.8E+02	1.5E+05			78	**80**	
nickel	0.012	1	0.012	100%	0.005	60%	0.00002	20%		1.4E+03	1.1E+04	1.3E+04			1157	**1200**	
selenium	0.006			100%		60%	0.021	60%		7.2E+02	NA	6.9E+06			720	**700**	
zinc	0.5	1	0.5	100%	0.001	80%	1.75	80%		3.0E+04	1.1E+06	2.9E+08			29208	**30000**	
cyanide (free) (no VI)	0.006	1	0.006	100%	0.1	50%	0.0008	0%		9.0E+02	3.3E+02	6.6E+05			243	**240**	
TCE							0.002	10%		NA	NA	NA	4.3E-01	**0.4**			
1,1,1-TCA							5	0%		NA	NA	NA	1.2E+03	**1200**			
PCE							0.2	10%		NA	NA	NA	4.3E+01	**40**			
cis-1,2-dichloroethene							0.007	0%		NA	NA	NA	1.7E+00	**2**			
phenol	0.7	1	0.7	100%	0.1	30%	0.035	30%		1.5E+05	5.4E+04	2.0E+07			39651	**40000**	
pentachlorophenol	0.003	1	0.003	100%	0.24	0%	0.0105	0%		9.0E+02	1.4E+02	8.6E+06			120	**120**	
cresols	0.1	1	0.1	100%	0.1	50%	0.35	50%		1.5E+04	5.6E+03	1.4E+08			4054	**4000**	
DDX	0.002	1	0.002	100%	0.018	0%	0.007	0%		6.0E+02	1.2E+03	5.7E+06			404	**400**	
aldrin and dieldrin	0.0001	1	0.0001	100%	0.1	10%	0.00035	10%		2.7E+01	1.0E+01	2.6E+05			7.3	**10**	
chlordane	0.0005	1	0.0005	100%	0.04	0%	0.00175	0%		1.5E+02	1.4E+02	1.4E+06			72	**70**	
endosulfan	0.006	1	0.006	100%	0.1	30%	0.021	30%		1.3E+03	4.7E+02	1.2E+07			341	**340**	
endrin	0.0002	1	0.0002	100%	0.1	0%	0.0007	0%		6.0E+01	2.2E+01	5.7E+05			16	**20**	
heptachlor	0.0001	1	0.0001	100%	0.1	0%	0.00035	0%		3.0E+01	1.1E+01	2.9E+05			8.1	**10**	
HCB	0.00016	1	0.00016	100%	0.1	0%	0.00056	0%		4.8E+01	1.8E+01	4.6E+05			13	**10**	
methoxychlor	0.005	1	0.005	100%	0.1	0%	0.0175	0%		1.5E+03	5.6E+02	1.4E+07			405	**400**	
mirex	0.0002	1	0.0002	100%	0.1	0%	0.0007	0%		6.0E+01	2.2E+01	5.7E+05			16	**20**	
toxaphene	0.00035	1	0.00035	100%	0.1	10%	0.001225	10%		9.5E+01	3.5E+01	9.0E+05			26	**30**	
2,4,5-T	0.01	1	0.01	100%	0.1	0%	0.035	0%		3.0E+03	1.1E+03	2.9E+07			811	**800**	
2,4-D	0.01	1	0.01	100%	0.05	0%	0.035	0%		3.0E+03	2.2E+03	2.9E+07			1277	**1300**	
MCPA	0.01	1	0.01	100%	0.1	0%	0.035	0%		3.0E+03	1.1E+03	2.9E+07			811	**800**	
MCPB	0.01	1	0.01	100%	0.1	0%	0.035	0%		3.0E+03	1.1E+03	2.9E+07			811	**800**	
mecoprop	0.01	1	0.01	100%	0.1	0%	0.035	0%		3.0E+03	1.1E+03	2.9E+07			811	**800**	
picloram	0.07	1	0.07	100%	0.1	0%	0.245	0%		2.1E+04	7.8E+03	2.0E+08			5676	**5700**	
atrazine	0.005	1	0.005	100%	0.1	0%	0.0175	0%		1.5E+03	5.6E+02	1.4E+07			405	**400**	
chlorpyrifos	0.003	1	0.003	100%	0.03	50%	0.0105	50%		4.5E+02	5.6E+02	4.3E+06			249	**250**	
bifenthrin	0.01	1	0.01	100%	0.1	10%	0.035	10%		2.7E+03	1.0E+03	2.6E+07			730	**730**	
PCBs	0.00002	1	0.00002	100%	0.14	0%	0.00007	0%		6.0E+00	1.6E+00	5.7E+04			1.3	**1**	
PBDE Flame Retardants (Br1-Br9)	0.0001	1	0.0001	100%	0.1	80%	0.00035	80%		6.0E+00	2.2E+00	5.7E+04			1.6	**2**	

NA Pathway not of significance for chemical assessed (refer to Appendix A for chemical-specific details)

Non-Threshold Effects - Lifetime Exposures [young child and adult]

Compound	Toxicity Reference Value Oral (TRV_O) $(mg/kg/day)^{-1}$	GI Absorption (GAF) (unitless)	Non-Threshold Slope Factor Dermal (SFd) $(mg/kg/day)^{-1}$	Oral Bioavailability BA_O (%)	Dermal Absorption Factor (DAF) (unitless)		Toxicity Reference Value Inhalation (TRV_I) $(mg/m^3)^{-1}$ [1]		Target Risk (TR)	Pathway Specific HILs (mg/kg)			Soil Vapour HIL (mg/m^3) (eqns 13 and 14)	Derived Interim Soil Gas IL - Threshold (to 1 or 2 s.f.) (mg/m3)	Derived Soil HIL (not rounded) (mg/kg) (eqn 2 for relevant pathways)	Derived Soil HIL (to 1 or 2 s.f.) (mg/kg)	Notes
										Soil Ingestion (eqns 4 and 5)	Dermal (eqns 7 and 8)	Dust (eqns 10 and 11)					
TCE							0.004		1E-05	NA	NA	NA	1.2E+00	**1**			
vinyl chloride							0.0088		1E-05	NA	NA	NA	5.5E-01	**0.5**			
benzo(a)pyrene	0.5	1	0.5	14%	0.013		1.43E-01		1E-05	3.3E+02	5.8E+01	1.1E+05			49.6	**50**	1
benzo(a)pyrene (Early-Life)	0.5	1	0.5	14%	0.013		1.43E-01		1E-05	8.1E+01	2.1E+01	4.3E+04			16.8	**20**	1

NA Pathway not of significance for chemical assessed (refer to Appendix A for chemical-specific details)

1 Refer to Appendix A for discussion on different calculations conducted for benzo(a)pyrene and basis for HIL adopted

APPENDIX C2: NEPM HIL C CALCULATION SPREADSHEET (104 DAYS/YEAR)

Derivation of Investigation Levels
HIL C - Recreational

Summary of Exposure Parameters		Abbreviation	units	Parameter	References/Notes
Soil and Dust Ingestion Rate	- Young children (0-5 years)	IR_{SC}	mg/day	50	50% of HIL A assumption, Schedule B7, Table 5
	- Adults	IR_{SA}	mg/day	25	50% of HIL A assumption, Schedule B7, Table 5
Surface Area of Skin	- Young children (0-5 years)	SA_C	cm^2/day	2700	As per enHealth (2012)
	- Adults	SA_A	cm^2/day	6300	As per enHealth (2012) for male and female combined
Soil-to-Skin Adherence Factor		AF	mg/cm^2/day	0.5	Schedule B7, Table 5
Time Spent Outdoors		ETo	hours	2	Schedule B7, Table 5
Time Spent Indoors		ETi	hours	0	Schedule B7, Table 5
Lung Retention Factor		RF	-	0.375	Schedule B7, Table 5
Particulate Emission Factor		PEFo	(m^3/kg)	2.6E+07	As per Equation 21 based assumptions presented in Schedule B7
Outdoor Air-to-Soil Gas Attenuation Factor		α	-	0.05	Value adopted as discussed in Section 5.5 of Schedule B7
Body weight	- Young children (0-5 years)	BW_C	kg	15	Schedule B7, Table 5
	- Adults	BW_A	kg	70	Schedule B7, Table 5
Exposure Frequency		EF	days/year	104	Schedule B7, Table 5
Exposure Duration	- Young children (0-5 years)	ED_C	years	6	Schedule B7, Table 5
	- Adults	ED_A	years	29	Schedule B7, Table 5
Averaging Time (non-carcinogenic)		AT_T	days	ED*365	Calculated based on ED for each relevant age group, multiplied by 24 hours for the assessment of inhalation exposures
Averaging Time (carcinogenic)		AT_{NT}	days	25550	Based on lifetime of 70 years, multiplied by 24 hours for the assessment of inhalation exposures

Threshold Calculations - Young Child Aged 2-3 years

Compound	Toxicity Reference Value Oral (TRV_O) (mg/kg/day)	GI Absorption (GAF) (unitless)	Toxicity Reference Value Dermal (TRV_D) (mg/kg/day)	Oral Bioavailability BA_O (%)	Dermal Absorption Factor (DAF) (unitless)	Background Intake Oral/Dermal (BI_O) (% of TDI)	Toxicity Reference Value Inhalation (TRV_I) (mg/m^3)	Background Intake Inhalation (BIi) (% of TC)		Pathway Specific HILs (mg/kg)			Soil Vapour HIL (mg/m^3) (eqn 12)	Derived Interim Soil Gas HIL - Threshold (to 1 or 2 s.f.) (mg/m3)	Derived Soil HIL (not rounded) (mg/kg) (eqn 2 for relevant pathways)	Derived Soil HIL (to 1 or 2 s.f.) (mg/kg)	Notes
										Soil Ingestion (eqn 3)	Dermal (eqn 6)	Dust (eqn 9)					
arsenic	0.002	1	0.002	100%	0.005	50%	0.001	0%		1.1E+03	7.8E+03	2.9E+06			927	**900**	
beryllium	0.002	0.007	0.000014	100%	0.001	30%	0.000020	0%		1.5E+03	3.8E+02	5.8E+04			302	**300**	
boron	0.2			100%		65%	0.7	65%		7.4E+04	NA	7.1E+08			73694	**70000**	
cadmium	0.0008			100%		60%	0.000005	20%		3.4E+02	NA	1.2E+04			327	**300**	
chromium (VI)	0.001			100%		10%	0.0001	0%		9.5E+02	NA	2.9E+05			944	**900**	
cobalt	0.001	1	0.0014	100%	0.001	20%	0.0001	0%		1.2E+03	4.4E+04	2.9E+05			1144	**1000**	
copper	0.14			100%		60%	0.49	60%		5.9E+04	NA	5.6E+08			58955	**59000**	
manganese	0.16			100%		50%	0.00015	20%		8.4E+04	NA	3.5E+05			67723	**68000**	
methyl mercury	0.00023	1	0.00023	100%	0.001	80%	0.000805	80%		4.8E+01	1.8E+03	4.6E+05			47	**47**	
mercury (inorganic)	0.0006	0.07	0.000042	100%	0.001	40%	0.0002	10%		3.8E+02	9.8E+02	5.2E+05			273	**300**	
nickel	0.012	1	0.012	100%	0.005	60%	0.00002	20%		5.1E+03	3.7E+04	4.6E+04			4060	**4100**	
selenium	0.006			100%		60%	0.021	60%		2.5E+03	NA	2.4E+07			2527	**3000**	
zinc	0.5	1	0.5	100%	0.001	80%	1.75	80%		1.1E+05	3.9E+06	1.0E+09			102510	**100000**	
cyanide (free) (no VI)	0.006	1	0.006	100%	0.1	50%	0.0008	0%		3.2E+03	1.2E+03	2.3E+06			853	**850**	
TCE							0.002	10%		NA	NA	NA	1.5E+00	**1.5**			
1,1,1-TCA							5	0%		NA	NA	NA	4.2E+03	**4212**			
PCE							0.2	10%		NA	NA	NA	1.5E+02	**200**			
cis-1,2-dichloroethene							0.007	0%		NA	NA	NA	5.9E+00	**6**			
phenol	0.7	1	0.7	100%	0.1	30%	0.035	30%		5.2E+05	1.9E+05	7.1E+07			139161	**140000**	
pentachlorophenol	0.003	1	0.003	100%	0.24	0%	0.0105	0%		3.2E+03	4.9E+02	3.0E+07			422	**420**	
cresols	0.1	1	0.1	100%	0.1	50%	0.35	50%		5.3E+04	1.9E+04	5.0E+08			14228	**10000**	
DDX	0.002	1	0.002	100%	0.018	0%	0.007	0%		2.1E+03	4.3E+03	2.0E+07			1417	**1000**	
aldrin and dieldrin	0.0001	1	0.0001	100%	0.1	10%	0.00035	10%		9.5E+01	3.5E+01	9.1E+05			25.6	**10**	
chlordane	0.0005	1	0.0005	100%	0.04	0%	0.00175	0%		5.3E+02	4.9E+02	5.0E+06			253	**300**	
endosulfan	0.006	1	0.006	100%	0.1	30%	0.021	30%		4.4E+03	1.6E+03	4.2E+07			1195	**1200**	
endrin	0.0002	1	0.0002	100%	0.1	0%	0.0007	0%		2.1E+02	7.8E+01	2.0E+06			57	**60**	
heptachlor	0.0001	1	0.0001	100%	0.1	0%	0.00035	0%		1.1E+02	3.9E+01	1.0E+06			28.5	**10**	
HCB	0.00016	1	0.00016	100%	0.1	0%	0.00056	0%		1.7E+02	6.2E+01	1.6E+06			46	**50**	
methoxychlor	0.005	1	0.005	100%	0.1	0%	0.0175	0%		5.3E+03	1.9E+03	5.0E+07			1423	**1000**	
mirex	0.0002	1	0.0002	100%	0.1	0%	0.0007	0%		2.1E+02	7.8E+01	2.0E+06			57	**60**	
toxaphene	0.00035	1	0.00035	100%	0.1	10%	0.001225	10%		3.3E+02	1.2E+02	3.2E+06			90	**90**	
2,4,5-T	0.01	1	0.01	100%	0.1	0%	0.035	0%		1.1E+04	3.9E+03	1.0E+08			2846	**3000**	
2,4-D	0.01	1	0.01	100%	0.05	0%	0.035	0%		1.1E+04	7.8E+03	1.0E+08			4480	**4500**	
MCPA	0.01	1	0.01	100%	0.1	0%	0.035	0%		1.1E+04	3.9E+03	1.0E+08			2846	**3000**	
MCPB	0.01	1	0.01	100%	0.1	0%	0.035	0%		1.1E+04	3.9E+03	1.0E+08			2846	**3000**	
mecoprop	0.01	1	0.01	100%	0.1	0%	0.035	0%		1.1E+04	3.9E+03	1.0E+08			2846	**3000**	
picloram	0.07	1	0.07	100%	0.1	0%	0.245	0%		7.4E+04	2.7E+04	7.1E+08			19919	**20000**	
atrazine	0.005	1	0.005	100%	0.1	0%	0.0175	0%		5.3E+03	1.9E+03	5.0E+07			1423	**1000**	
chlorpyrifos	0.003	1	0.003	100%	0.03	50%	0.0105	50%		1.6E+03	1.9E+03	1.5E+07			873	**870**	
bifenthrin	0.01	1	0.01	100%	0.1	10%	0.035	10%		9.5E+03	3.5E+03	9.1E+07			2561	**2600**	
PCBs	0.00002	1	0.00002	100%	0.14	0%	0.00007	0%		2.1E+01	5.6E+00	2.0E+05			4.4	**4**	
PBDE Flame Retardants (Br1-Br9)	0.0001	1	0.0001	100%	0.1	80%	0.00035	80%		2.1E+01	7.8E+00	2.0E+05			5.7	**6**	

NA Pathway not of significance for chemical assessed (refer to Appendix A for chemical-specific details)

Non-Threshold Effects - Lifetime Exposures [young child and adult]

Compound	Toxicity Reference Value Oral (TRV_O) $(mg/kg/day)^{-1}$	GI Absorption (GAF) (unitless)	Non-Threshold Slope Factor Dermal (SFd) $(mg/kg/day)^{-1}$	Oral Bioavailability BA_O (%)	Dermal Absorption Factor (DAF) (unitless)		Toxicity Reference Value Inhalation (TRV_I) $(mg/m^3)^{-1}$		Target Risk (TR)	Pathway Specific HILs (mg/kg)			Soil Vapour HIL (mg/m^3) (eqns 13 and 14)	Derived Interim Soil Gas IL - Threshold (to 1 or 2 s.f.) (mg/m3)	Derived Soil HIL (not rounded) (mg/kg) (eqn 2 for relevant pathways)	Derived Soil HIL (to 1 or 2 s.f.) (mg/kg)	Notes
										Soil Ingestion (eqns 4 and 5)	Dermal (eqns 7 and 8)	Dust (eqns 10 and 11)					
TCE							0.004		1E-05	NA	NA	NA	4.2E+00	**4**			
vinyl chloride							0.0088		1E-05	NA	NA	NA	1.9E+00	**1.9**			
benzo(a)pyrene	0.5	1	0.5	14%	0.013		1.43E-01		1E-05	1.2E+03	2.0E+02	4.0E+05			173.9	**200**	1
benzo(a)pyrene (Early-Life)	0.5	1	0.5	14%	0.013		1.43E-01		1E-05	2.8E+02	7.4E+01	1.5E+05			58.8	**60**	1

NA Pathway not of significance for chemical assessed (refer to Appendix A for chemical-specific details)
1 Refer to Appendix A for discussion on different calculations conducted for benzo(a)pyrene and basis for HIL adopted