DETAILED SITE INVESTIGATION

PRODUCTION KITCHEN
BRACKEN ST - CAMBRIDGE

Client: **Hobart International Airport**

Certificate of Title: **152454/1**

Investigation Date: **14/01/2025, 16/01/2025 & 22/01/2025**

Refer to this Report As

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Executive Summary

Enviro-Tech Consultants Pty. Ltd. (Envirotech) were contracted by Jaws Architects to prepare a phase II detailed site investigation (DSI) for a proposed commercial kitchen development located at Bracken Street, Cambridge (herein referred to as the Site or the Project Area) (refer to Appendix 1).

The purpose of the investigation was to evaluate the Site including the stockpile to the north of the proposed kitchen for contaminants of potential concern (CoPCs) identified in previous investigations (Envirotech Limited Scope Environmental Site Assessment [LSESA] 2024b and Envirotech Preliminary Site Investigation [PSI] 2025). The Site has historically been subject to potentially contaminating land-use activities (PCA's) and is now proposed to be redeveloped.

It is proposed that stockpiled soil will be used to infill the Production Kitchen Site to a level of 4.5 metres AHD. Based on calculations, the natural ground level beneath the stockpile is determined to be 3.4 metres AHD, with the estimated volume of the stockpiled soil being 15,000 cubic metres.

The Civil Aviation Authority partly overlaps the Site and is the likely source of historically distributed and broadly dispersed PFAS. At least five historical and demolished buildings have been identified in Site aerial photographs which are likely to be source of asbestos which was distinguished in the PSI and has been investigated as part of this DSI.

Contaminants of potential concern (CoPCs) encompass those known to be present at the site, as well as those that have not been detected but may potentially exist. Based on the available evidence, contaminants of potential concern include:

- Total recoverable hydrocarbons (TRH) or total petroleum hydrocarbons (TPH)
- Polycyclic aromatic hydrocarbons (PAH)
- Heavy metals
- PFAS

Asbestos, though not technically a contaminant, must be investigated due to potential health risks. It is present on the site in cement sheet form as an asbestos-containing material (ACM[1]) and likely exists in the soil as Friable Asbestos (FA[2]), Asbestos Fines (AF[3]).

The commercial and industrial land use guidelines have been established to assess human health risks with the plan of using the Site as a commercial kitchen. The design includes extensive paved surfaces across most of the Site, which minimizes the potential for exposure to soil contaminants. A commercial/industrial ecological guideline has been implemented since the Site has undergone significant modification. Pine plantations are located downgradient of the Site and are regarded as a commercial operation.

[1] Bonded ACM (bonded Asbestos) - asbestos-containing-material which is in sound condition and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). Bonded ACM refers to, in this instance, material that cannot pass a 7 mm x 7 mm sieve.

[2] Fibrous Asbestos - friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This material is in a degraded condition such that it can be broken or crumbled by hand pressure.

[3] Asbestos Fines - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

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The following are concluded from the detailed Site investigation:

- It is concluded from this assessment that **none** of the soil samples collected from the Site (within the stockpile and at the Production Kitchen Site) have COPC's (including PFAS) that exceed NEPM 2013 commercial/industrial guideline limits.
- There is a low risk that soil within the stockpile is considered as a hazardous substance if the soil is to be used in a manned which does not permit PFAS exposure to secondary receptors.
- PFAS compounds have been identified in the soil at levels that permit its use as fill material for the production kitchen site. This is contingent upon ensuring that more than 80% of the production kitchen site surface is paved and appropriately managed to limit exposure to secondary consumers, in accordance with a PFAS soil management plan.
- Residual asbestos-containing material (ACM) has been detected on the surface of the Production Kitchen Site at a depth ranging from 0 to 0.1 meters. The exposed asbestos at the surface does not comply with NEPM 2013 guidelines. It is necessary to determine if asbestos fibres (AF and FA) are present on the surface of the site in quantities exceeding NEPM 2013 guidelines near where ACM has been found. Alternatively, all surface soil in these areas may be removed, followed by validation sampling to confirm compliance with NEPM 2013 guidelines.
- Asbestos has **not** been detected in the stockpile, and the likelihood of the stockpile containing asbestos concentrations exceeding NEPM (2013) guideline limits is low.

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List of Abbreviations

ABC	Ambient Background Concentration
AHD	Australian Height Datum (1983)
ALS	Analytical Laboratory Services
APC	areas of potential concern
AS	Australian Standard
AST	above ground storage tank
bgl	below ground level
B(a)P	benzo(a)pyrene
BH	Borehole
BTEX	benzene, toluene, ethylbenzene and xylenes
CEC	cation exchange capacity
COA	certificate of analysis
COC	chain of custody
COPC	contaminants of potential concern
Cr III	Chromium
CRC CARE	Cooperative Research Centre for Contamination Assessment and Remediation of the Environment
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSM	Conceptual Site Model
CSA	Contaminated Site Assessment
DA	development application
DEM	Digital Elevation Model
DPAC	Department of Premier and Cabinet
DQO	data quality objective
DSG	Department of State Growth
DSI	detailed site investigation
EIL	ecological investigation level
Envirotech	Enviro-Tech Consultants Pty. Ltd.
EPA	Environmental Protection Authority
ESA	Environmental Site Assessment
ESL	ecological screening level
GDA94	Australian Geodetic Datum (1994) Zone 55
GIL	groundwater investigation level
GIS	Geographical Information System
GPS	global positioning system
HIL	health investigation level

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HSL	health screening level
IPS	Interim Planning Scheme
LIDAR	Light Detection And Ranging
LIST	Land and Information System, Tasmania
LNAPL	light non-aqueous phase liquid
LOR	limits of reporting
MRT	Mineral Resources Tasmania
N/A	not applicable
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM ASC	National Environment Protection (Assessment of Site Contamination) Measure 1999
NL	not limiting
OCP	organochlorine pesticide
PAH	polycyclic aromatic hydrocarbon
PCA	potentially contaminating activities
PCB	polychlorinated biphenyl
PHC	Petroleum hydrocarbon
PSI	preliminary site investigation
PVI	Petroleum vapour intrusion
RPD	relative percentage difference
QA	quality assurance
QC	quality control
SRN	Sample Receipt Notification
TDS	total dissolved solids
TEF	toxicity equivalence factor
TEQ	toxicity equivalent quotient
TPH	total petroleum hydrocarbons
TRH	total recoverable hydrocarbons
UPSS	Underground Petroleum Storage Systems
USCS	unified soil classification system
USEPA	United States Environmental Protection Authority
UPSS	underground petroleum storage system
UST	underground storage tank
VOCC	volatile organic chlorinated compound
WMS	Waterloo membrane samplers

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1 Introduction

1.1 Background

Enviro-Tech Consultants Pty. Ltd. (Envirotech) were contracted by Jaws Architects to prepare a phase II detailed site investigation (DSI) for a proposed commercial kitchen development located at Bracken Street, Cambridge (herein referred to as the Site or the Project Area) (refer to Appendix 1).

The purpose of the investigation was to evaluate the Site including the stockpile to the north of the proposed kitchen for contaminants of potential concern (CoPCs) identified in previous investigations (Envirotech Limited Scope Environmental Site Assessment [LSESA] 2024b and Envirotech Preliminary Site Investigation [PSI] 2025). The Site has historically been subject to potentially contaminating land-use activities (PCA's) and is now proposed to be redeveloped.

Fieldwork for this investigation took place from January 14th to 22nd, 2025, involving the collection and analysis of soil samples according to relevant industry guidelines. Selected samples were analysed in a NATA accredited laboratory, and the analytical results were compared against the Site Assessment Criteria (SAC) to determine the site's suitability for the proposed development.

1.2 Proposed Development

The proposed work plan is presented in Appendix 1.

It is proposed that stockpiled soil will be used to infill the Production Kitchen Site to a level of 4.5 metres AHD. Based on calculations, the natural ground level beneath the stockpile is determined to be 3.4 metres AHD, with the estimated volume of the stockpiled soil being 15,000 cubic metres.

It needs to be ensured that hazardous materials are not incorporated into the proposed development, and therefore the stockpile and the surface of the Production Kitchen Site is to be assessed for contaminants of potential concern including but not limited to PFAS, asbestos, hydrocarbons, and heavy metals.

1.3 Objectives

The objective of the Detailed Site Investigation (DSI) is to conduct a contaminated land assessment that addresses data gaps identified in the Limited Scope Environmental Site Assessment (Envirotech 2024b), and Preliminary Site Investigation (PSI) (Envirotech 2025). This assessment is in preparation for future commercial development of the Production Kitchen Site and its surroundings. The findings of the DSI will be used to determine if any management controls or remediation actions are necessary before, during, or after redevelopment.

1.4 Scope

Filed works include the following with more detail presented in the methods section of this report:

- Desktop review of the PSI and recent PFAS National Environmental Management Plan 3.0 guidelines as well as associated documentation.
- A more detailed Site walkover assessing for the presence/absence of asbestos.
- Sampling for Contaminants of Potential Concern (CoPC) including asbestos.
    - Drilling 21 core samples through the Stockpile into the natural ground
    - Hand excavations to 0.1m depth using a shovel
- Logging soil in all boreholes in accordance with AS1726 and photographing the soil core
- Collection and submitting samples to a NATA accredited laboratory for analysis:
    - Eighteen (18) primary soil samples and quality control samples for potential contaminants
    - Three (3) soil samples containing visible ACM
- Surveying ALL testing locations to 0.6m accuracy vertical (mAHD) and horizontal (GDA94) using a differential GPS as detailed in soil logs.

2 Site Description and Environmental Setting

2.1 Site Details

The Site spans approximately 16,800 m² of airside land within HIAPL. Part of the Site comprising the 'stockpiled area' has been utilized over the past decade for stockpiling soil and materials excavated during airside projects. The bulk of this material has sourced from the construction of the building pad and footings from the freight depot Site. Additional historical context, including aerial photography and LIDAR comparisons can be found in the PSI (Envirotech 2025).

The Civil Aviation Authority partly overlaps the Site and is the likely source of historically distributed and broadly dispersed PFAS. At least five historical and demolished buildings have been identified in Site aerial photographs which are likely to be source of asbestos which was distinguished in the PSI and has been investigated as part of this DSI.

Details of the Site are summarised in Table 1.

Table 1 Site Summary

Item	Details
Land Title	152454/1
Project Area Address (The LIST)	'HOBART INTERNATIONAL AIRPORT' - 1309 TASMAN HWY CAMBRIDGE TAS 7170
Project Area Physical Address	The southern corner of Sinclair Place and Bracken Street, HIAPL Freight Terminal Precinct.
Locality Map	Refer to Figure 1
Development	Department of Health Production Kitchen
Site Area (m^2)	16,800 m^2
Authority	Commonwealth of Australia (Crown)
Land Use	Commercial/Industrial
Onsite PCA's	Civil Aviation Authority Potentially Contaminated Fill Stockpiling
Offsite PCA's	Civil Aviation Authority Potentially Contaminated Fill Stockpiling Landfill
Site Topography	Natural ground surface 3.2 to 4.7m AHD Filling up to 7.2 m AHD
Site Drainage	Well drained sandy soils vulnerable to short intensity flash flooding only
Receptors	Frederick Henry Bay 1.0km southwest of Site boundary. Conservation of Freshwater Ecosystem Values (CFEV) Wetland – Medium Integrated Conservation Value 700m to northeast. Barilla Bay 2.4 km to northeast.

2.2 Surrounding Land Use

Details of surrounding land use are presented in Table 2.

Table 2 Surrounding Land Use

Direction	NEPM Land Use	Use
Northwest	Commercial/Industrial D	Former Landfill Freight Depot
Northeast	Commercial/Industrial D	Civil Aviation Authority & Airside
Southeast	Commercial/Industrial D	Pine Plantations, Frederick Henry Bay ~1km
Southwest	Commercial/Industrial D	Lanherne Golf Club

2.3 Local topography

Based on the Hobart Airport Light Detection and ranging (LIDAR) 2024, the Site ranges in elevation from 3.2 to 4.7m AHD across the natural ground surface. A series of longitudinal dune swales (troughs) and crests are apparent within the landscape which are aligned with the coast. The natural landscape is

interrupted by sandy fill which cover the proposed road (extension of Sinclair Place), the turning circle and the bulk of the stockpile which is has an elevation of up to 7.2 m AHD.

2.4 Local Hydrology

There is a wetland to the northeast of the Site. Previous studies (GHD 2018) indicate that this flows toward Seven Mile Beach (GHD). This wetland has been classified as having medium Conservation of Freshwater Ecosystem Values (CFEV) according to LISTmap (2016). The shallow sands are estimated to have an infiltration rate in the order of 3 m/day and are well drained.

2.5 Geology

According to 1:25,000 mineral resources Tasmania geological mapping geology has been generalised as comprising Quaternary Sand gravel and mud of alluvial, lacustrine and littoral origin.

2.6 Hydrogeology

Based on Envirotech's geotechnical site investigation, (Envirotech 2024a) groundwater has a fall of 0.0025 (0.25%) to the southeast towards Frederick Henry Bay. The elevation of groundwater is calculated to range from 2.1 to 2.6m AHD beneath the Site approximating 0.5 to 1.5m below ground surface.

3 Preliminary Conceptual Site Model

3.1 Areas of Potential Concern

3.1.1 Stockpile

The following PCA are apparent within the stockpiled area:

- Within the stockpile area, GHD have reported PFOS in soil at concentrations below the nominated threshold limits (GHD 2024) (Map 1). The only sample which exceeded guidelines for leachability (TP12) which was located outside of the Site towards the historical Site. The sampling depth has not been indicated, but it is likely the sample was collected from or close to the natural ground surface layer.
- PFAS was detected in test pits 3, 9, 10 and 11 (all offsite), and the soil had the appearance of topsoil (dark grey in colour) but clearly comprised fill, with the PFAS likely to have sourced from the stockpile origins.
- There were no detections of heavy metals or hydrocarbons exceeding nominated threshold limits in the stockpiled soil.
- There was no detection of asbestos in any of the test pits.
- Envirotech similarly reported PFOS in soil at concentrations below the nominated threshold limits (Envirotech 2024b).

3.1.2 Natural Surface of The Site

- There is evidence of historical building on the Site which were constructed from asbestos sheeting or asbestos containing materials (ACM). As part of the PSI, the site walkover identified areas of broken sheeting distributed to the south of the Site (offsite). The full extent of ACM is to be investigated.
- Historical use of PFAS at the Civil Aviation Authority Training Facility located to the northeast. Part of the training ground covers the Site, including beneath parts of the stockpile. PFAS is identified in natural soil layers at very low concentrations within the stockpile area (Envirotech 2024b).

3.2 Contaminants of Potential Concern

Contaminants of potential concern (CoPCs) encompass those known to be present at the site, as well as those that have not been detected but may potentially exist. Based on the available evidence, contaminants of potential concern include:

- Total recoverable hydrocarbons (TRH) or total petroleum hydrocarbons (TPH)
- Polycyclic aromatic hydrocarbons (PAH)
- Heavy metals
- PFAS

Asbestos, though not technically a contaminant, must be investigated due to potential health risks. It is present on the site in cement sheet form as an asbestos-containing material (ACM[4]) and likely exists in the soil as Friable Asbestos (FA[5]), Asbestos Fines (AF[6]).

[4] Bonded ACM (bonded Asbestos) - asbestos-containing-material which is in sound condition and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). Bonded ACM refers to, in this instance, material that cannot pass a 7 mm x 7 mm sieve.
[5] Fibrous Asbestos - friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This material is in a degraded condition such that it can be broken or crumbled by hand pressure.
[6] Asbestos Fines - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

3.3 Potential Receptors

3.3.1 Current Receptors

The current receptors identified at and near the site include airport workers. These receptors are primarily commercial users, such as workers performing general HIAPL tasks in the area, intrusive maintenance workers involved in future trenching activities, or workers engaged in stockpiling or earthmoving operations in the area.

3.3.2 Future Receptors

The site is planned for commercial development. Future receptors will include construction workers during development and commercial workers after completion. For the proposed production kitchen, commercial/industrial thresholds have been applied on the basis that the proposal is for all surfaces are to be fully paved.

3.3.3 Ecological Receptors

Ecological receptors need to be considered mainly in the context of potential exposure to PFAS.

3.4 Potential Contaminant Exposure Pathways

The conceptual site model (CSM) in Table 3 details the potential hazards and risks identified at the Site from the PCA.

Table 3 Conceptual Site Model

Potential Contamination Source	COPCs	Potential Exposure Pathways and Transport Mechanisms	Receptors
Uncontrolled fill on the site stockpile	Asbestos	Inhalation of dust/fibers Disturbance during construction	- On-site construction Workers - Off-site human receptors
	PFAS, PAHs, heavy metals	Oral exposure Inhalation of dust Disturbance during construction	- On-site construction Workers - Off-site human receptors
Hazardous building materials in former site structures	Asbestos	Inhalation of dust/fibers Disturbance during construction	- On-site construction Workers - Off-site human receptors
Contaminated topsoil	PFAS	Oral exposure Inhalation of dust Disturbance during construction	- On-site construction Workers - Off-site human receptors
	PFAS	Ingestion of vegetation or primary consumers in soil	Ecological receptors (secondary to tertiary)
Contaminated soil	TRH, BTEX	Inhalation exposure	Trench workers
	TRH, BTEX	Vapor intrusion	On-site commercial users

4 Assessment Criteria

The assessment criteria specified in the following publications were considered for this assessment:

- National Environment Protection (Assessment of Site Contamination) Measure 2009, as amended 2013 (NEPM)
- Tasmania EPA [TAS EPA], Information Bulletin IB105 Classification and Management of Contaminated Soil For Disposal (2018)
- Heads of the EPA Australia and New Zealand, PFAS National Environmental Management Plan [PFAS NEMP], Version 3.0 (2025)

4.1 Airport (Environment Protection) Regulations 1997

The Airport Regulations establish rules for pollution control based on the National Environment Protection Council Act 1994. They aim to improve environmental management at airports, specifically addressing soil pollution to protect soil chemistry, human health, aesthetics, the environment, and land use. If soil pollution exceeds set limits, an environmental officer or expert must properly manage or mitigate the effects.

The soil pollution limits specified in the Airport Regulations for this report pertain to 'areas of an airport generally'.

4.2 Human Health Guidelines

The commercial and industrial land use guidelines have been established to assess human health risks with the plan of using the Site as a commercial kitchen. The design includes extensive paved surfaces across most of the Site, which minimizes the potential for exposure to soil contaminants.

4.2.1 Soil Health Investigation Levels (HILs) – HIL D Commercial/industrial

The NEPM (NEPC 2013) guidelines outline four generic land use settings for Tier 1 assessment of potential human health risks from metals and organic substances such as PAHs, phenols, pesticides, herbicides. The HILs apply to assessing human health risk through all relevant exposure pathways.

4.2.2 Soil Health Screening Levels (HSLs) – HSL D Commercial/industrial for vapour intrusion

HSLs for selected petroleum compounds assess human health risk via inhalation and direct contact. The HSLs are criteria based on a series of conservative assumptions designed to protect human health in various exposure scenarios across different land use types.

As part of NEPM 2013 Schedule B1, The HSLs are thresholds that help determine whether detected Petroleum Hydrocarbon Compounds in soil present a risk of petroleum hydrocarbon vapour intrusion (PVI) into confined spaces. This includes but is not limited to spaces such as future commercial spaces or areas where workers might be exposed for example in trenches. The HSLs depend on specific soil physicochemical properties, land use scenarios, and the characteristics of building structures.

The adopted threshold limits for EILs and ESLs from Schedule B1 in the ASC NEPM (NEPC 2013) are summarised in Appendix 4.

4.2.3 Hydrocarbon Management Limits – HSL D Commercial/industrial for vapour intrusion

Per Section 2.9 of Schedule B1 of the ASC NEPM (NEPC 2013), Management Limits for petroleum hydrocarbons were assessed to determine if soil conditions present a risk to buried infrastructure or have the potential to form NAPL with potential fire and explosion hazard risks. Values from Table 1 B(6) of Schedule B1 for coarse-grained soils will be used.

4.2.4 Soil HSLs for Asbestos

Further characterisation of in-situ fill material was assessed against NEPM (NEPC 2013) for asbestos in soils. The action criteria outlined in Table 4 was adopted as per the specific land use scenario for the specific portion of the site.

Table 4 Summary of Adopted HSLS For Asbestos Contamination In Soil

Form of Asbestos	Health Screening Level (w/w) – Commercial/Industrial D
Bonded ACM	0.05%
FA and AF (friable asbestos)	0.001%
All forms of asbestos	No visible asbestos for surface soils

4.2.5 PFAS Soil Health Investigation Levels – Commercial and industrial

The HEPA PFAS National Environmental Management Plan Version 3.0 (2025) provides guidance on the management of PFAS impacted soils. The classes of soil criteria defined in the PFAS NEMP Version 3.0 (HEPA 2020) for human Health Investigation Levels (HIL) are presented in Table 11.

Assumes eight hours is spent indoors and one hour spent outdoors at a site such as a shop, office, factory, or industrial site. If these scenarios are not appropriate, a site-specific assessment is required.

The PFOS + PFHxS value was derived using the methodology consistent with assumptions set out in the ASC NEPM for HIL D. The industrial/commercial direct exposure criterion for PFOA (including its salts and related compounds) has been set as 50mg/kg.

Table 5 Summary of PFAS Human Health Soil Criteria

Soil Criteria (Human Health)	PFOS + PFHxS (mg/kg)	PFOA (mg/kg)
Commercial/Industrial (HIL-D)	20	50

4.3 Ecological Guidelines

A commercial/industrial ecological guideline has been implemented since the Site has undergone significant modification. Pine plantations are located downgradient of the Site and are regarded as a commercial operation.

4.3.1 PFAS Soil Health Investigation Levels – Ecological Guidelines Value

The ecological guideline values are used to assess and investigate potential risks to aquatic and terrestrial ecosystems. The ecological guideline values in Table 6 are intended to be protective of wildlife, based on the current scientific evidence. The following interim ecological soil guideline values consider both direct exposure and indirect exposure to ecological receptors. It is acknowledged that these guideline values are interim and may be refined by future work as additional relevant research becomes available.

The ecological direct soil exposure guideline applies specifically to the protection of organisms that live within, or in close contact with soil, such as earthworms and plants.

Ecological indirect soil exposure guideline accounts for the various pathways through which organisms can be exposed whether or not they are in direct contact with PFAS-contaminated soil (for example, exposure through the food chain, such as animals consuming contaminated prey, plants and water). The values calculated for exposure of a small secondary or tertiary consumer with large proportionate food intake are based on the most sensitive exposure pathway.

For the purposes of this investigation, the location of the existing stockpiles is not pertinent as the focus of this assessment is to determine whether the proposed use of the soil at the Production Kitchen Site presents a scenario where the soil could be classified as hazardous.

As the Site is proposed to be intensively developed with greater than 80% of each hectare (1.68 ha in total) will be covered by hard surfaces, a higher value of 0.14mg/kg is allocated as the trigger for assessing risk to secondary consumers such as invertivores and carnivores (Table 6).

Table 6 Summary of PFAS Ecological Soil Criteria

Soil Criteria (Ecological) – all land uses	PFOS (mg/kg)	PFOA (mg/kg)
Ecological direct soil exposure (no reptiles)	1	10
Ecological direct soil exposure (with reptiles)	1	0.005
Ecological indirect soil exposure in areas of low accessibility		0.14

*Based on a small Insectivorous Marsupial dusky antechinus of 62g weight

4.3.2 Soil Ecological Investigation Levels (EIL's)

Ecological Investigation Levels (EILs) pertain to specific metals and organic compounds and are designed to evaluate risks to terrestrial ecosystems in areas of ecological significance, urban residential/open spaces, and commercial/industrial land use scenarios. These levels apply to the top 2 meters of accessible soil, encompassing the root zone and habitation zone of various species.

The proposed development detailed in Section 1.2 includes commercial and industrial land use with limited soil accessibility. Therefore, it is necessary to assess the ecological risks according to the ecological criteria applicable to commercial and industrial land use for these areas.

4.3.3 Soil Ecological Screening Levels (ESL's)

Ecological screening levels (ESLs) have been established for certain petroleum compounds and fractions, and they are used to assess risk to terrestrial ecosystems. These ESLs apply to the top 1 meter of accessible soil. For this assessment, threshold limits are derived based on coarse-grained soil criteria.

The adopted threshold limits for EILs and ESLs from Schedule B1 in the ASC NEPM (NEPC 2013) are summarised in Appendix 4.

4.4 Aesthetics

According to Section 3.6 of NEPM Schedule B1, the aesthetic quality of accessible soils should be taken into account even if analytical testing indicates that concentrations of Contaminants of Potential Concern (CoPCs) are within the Site Assessment Criteria (SAC).

There are no specific guidelines to quantify the aesthetic suitability of soils. According to the NEPM, professional judgement should be used to assess the quantity, type, and distribution of foreign materials and/or odors concerning the intended land use.

The following examples would trigger further aesthetic assessment:

- Hydrocarbon sheen on groundwater
- Presence of anthropogenic materials and/or soil staining
- Odorous soils or groundwater (i.e., hydrocarbon or hydrogen sulphide odours)
- *Asbestos or other foreign materials on soil surface*

4.5 Disposal

Tasmanian EPA (2018) Waste Classifications Guidelines; Information Bulletin No. 105

The Tasmanian Environmental Protection Authority (EPA) has developed guidelines for the disposal of contaminated soils, including criteria to determine the appropriate landfill class for disposal. These criteria have been assessed against site data to provide an indication of the likely management requirements for the material during the proposed site redevelopment.

5 Methodology

5.1 Overview

The methodology adopted in the assessment is summarised in Table 7.

5.1.1 Asbestos

A total of 62 asbestos samples were collected from the 15,000 m^3 stockpile. Samples were carefully screened as per method presented in Table 7 to determine if ACM (cement sheet) has been disposed into the stockpile.

Table 7 Field Investigation Procedures

Task	Adopted Method
Preliminaries Pre-Drilling	**Traffic management** – not required **Approvals** – the investigation was on private land. Envirotech was given permission from the land holder to carry out the works through inductions, SWMS, detailed SOP's and interviews. **Clearance of underground utilities** - All services at the Site were located by acquiring service locations digitally and uploading them into Trimble. A 'no drill' buffer of 5m was designated around all mapped services.
	Soil coring – A 4wd AMS Powerprobe Drilling Rig collects soil cores up to 6.0 m deep. **Bore target depth –** All boreholes were terminated in the run that intercepted the topsoil layer, ensuring the fill was intercepted. **Soil contamination sampling** – The investigation followed Australian Standards AS 4482.1—2005 and AS 4482.2-1999 for sampling non-volatile, semi-volatile, and volatile substances. Samples were collected at each 0.5-m interval or when soil type changed. Each sample was handled with clean nitrile gloves and placed in soil jars with minimal air space to reduce PHC volatilisation. **Soil asbestos sampling** – Discrete 0.5m length soil samples representing 630 cm^3 were collected from the core sample tube and placed into a zip lock bag for further asbestos screening. ACM screening was conducted offsite using an enclosed sieve machine, which allowed full sample separation through a 2.36mm sieve. The accuracy of the screening method is calculated at 1 part per 10,000 (0.01%). **Soil logging** - the soil was logged according to the Australian Standard AS1726-1993 and the NEPM ASC using a modified method based on the Unified Soil Classification System (USCS). Visual and olfactory observations (e.g. clay content, inclusions, moisture, odours, staining) were also recorded. The soil bore logs are presented in Attachment B. **Sample quality control –** guided by quality control (QC) procedures outlined in AS 4482.1 - 2005 and AS 4482.2-1999. See the Soil Analysis section for QC details. **Field Contamination Sample Management** – Soil contamination samples were placed into an ice-filled Esky. **Sample Freight** – All samples were transferred to an Esky with ice blocks for safe freight. All Eskys were security sealed, with chain of custody documentation and note tracking for freight to Analytical Laboratory Services (ALS) in Melbourne.
Contaminated Soil analysis	**Laboratory services** (NATA accredited) ALS Melbourne - Primary, blank, and duplicate samples
Asbestos soil analysis	During the sampling works for this detained site investigation, a visual inspection was also conducted to ensure no asbestos (AF/FA)/ACM materials were visible. The inspections for asbestos were undertaken in accordance with NEPM 2013 in Section 4.1.1. In addition to the visual inspection, a screening assessment based on NEPM 2013. A 500 mL soil sample was collected at varying depths. All of the 12 collected samples were analysed for asbestos fines (AF) / fibrous asbestos (FA) as per NEPM (2013) guidelines. Where Asbestos Containing Material (ACM), was discerned in a sample, the entire bag sample, including the ACM and soil (sand), was double bagged and dispatched to the laboratory. The purpose was to conduct a detailed analysis of the ACM composition and to screen fibers.

Task	Adopted Method
Surveying (GPS)	To accurately determine soil coring depths/elevations, all borehole collars were surveyed to 0.6m accuracy using a differential GPS. Data was captured in GDA94 Zone 55 & mAHD.
LIDAR Data	HobartAirport2024-DEM-1m_5415256_GDA2020_Zone 55. Reprojected to GDA94_Zone 55 Clarence2019-DEM-1m_5415256_GDA2020_55. Reprojected to GDA94_Zone 55 GreaterHobartLiDAR2013-DEM-GRID-001_5415256_55_0001_0001 (GDA94_Zone 55) ClimateFuturesDerwent2008-DEM-1m_5415256_55.tif (GDA94_Zone 55)

5.2 Laboratory Analysis

The analytical results are summarised in Section 0 and the quality control results are summarised in Section 8.

5.2.1 Soil Contamination Testing

The soil contamination primary and quality control sample analysis schedule is summarised in Table 8. The pH was tested along with COPCs to determine ecological threshold limits.

Table 8 Soil Contamination Analysis

Samples	Samples	Analytes
Primary[1]	PT01 2.0 BH10 0.5, 1.5 BH12 0.3, 0.7 BH13 1.0 PT16 1.0 PT20 0.5, 2.5 PT28 0.0 PT34 0.1 PT36 0.0 PT40 0.0 PT42 0.0 PT44 1.5, 2.6 PT45 0.0 PT46 0.0	• PFAS • Benzene, toluene, ethylbenzene, xylene (BTEX) • Naphthalene • TRH C6 – C10 minus BTEX (F1) • TRH C10 – C16 minus Naphthalene (F2) • TRH >C16 • Polynuclear Aromatic Hydrocarbons (PAH's) • 8 metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Hg) • pH
Duplicate[2]	Duplicate	
Rinse[3]	Rinse blank	
Field[4]	Field blank	
Asbestos	PT07 0.0 PT19 0.0 PT32 0.0	• Asbestos 500mL

1 Primary sample collected from target locations.
2 Duplicate quality control sample tested to determine representativeness of results.
3 Equipment risk blank to assess potential for cross-contamination between samples.
4 Field blank to assess potential for contamination to have sourced from the working environment.
5 Quality control trip sample transported alongside other samples to detect any potential VOC interference during transit

6 Field Observations

6.1 Site Walkover

Following the preliminary PSI walkover, a more detailed Site walkover was conducted between the 16th and the 22nd of January 2025. Photographic observation points are presented in Map 2

6.1.1 Asbestos Visual Assessment

The primary objective of the walkover was to conduct a visual assessment for the presence or absence of asbestos. This specifically focused on areas near the southern corner of the Site, near where asbestos had been previously identified in the offsite cutting, as well as the northern corner of the site, where demolished sheds were observed in aerial imagery.

Asbestos observed at the Site was encountered within 0.1m of surface level (see Map 3) with occurrences catalogued in Table 10. All pieces of asbestos encountered were retained in sealed bags for further analysis.

There are two distinct locations of asbestos distribution:

- Area A to the north which is an inferred 55m wide zone surrounding former building structures.
- Area B to the south with a narrower distribution of 40m associated with smaller shed structures (offsite).
- As the focus has been on the Site only (and not around other buildings to the west), the true extent of the asbestos may be larger than inferred.
- It is apparent that the bulk of the asbestos has been removed from the buildings and the mapped asbestos only represents a small proportion of asbestos remaining from the original building.

Table 9 Asbestos Registry from Site Investigation Works

Sample (Bag) ID	Occurrence	Date	Easting GDA94 55	Northing GDA94 55	Depth (m)	Layer	Dimensions	Weight
01	Surface	14/01/2025	541828.6	5256487.68	0	5	19x17x5 29x22x4 15x4x1 32x19x5 31x17x4 28x21x4	0.81 3.19 0.37 2.58 2.43 2.48
02	Surface	14/01/2025	541826.51	5256488.79	0	5	42x20x4	3.75
03	Surface	14/01/2025	541826.22	5256490.36	0	5	32x19x5 24x20x4	2.12 1.71
04	Surface	14/01/2025	541827.8	5256487.11	0	5	18x16x5	1.03
05	Surface	14/01/2025	541847.66	5256360.59	0	6	66x51x5	30.7
06	Surface	14/01/2025	541844.5	5256363.38	0		95x60x8	37.68
07	Excavation	14/01/2025	541845.85	5256362.52	0	5	43x33x6 62x25x5 90x83x5	13.88 15.81 69.47
08	Surface	14/01/2025	541843.48	5256365.93	0	6	58x43x6 58x50x5	17.96 22.09
09	Surface	14/01/2025	541835.78	5256353.17	0	5	111x72x6	72.81
10	Surface	14/01/2025	541852.09	5256361.53	0	5	67x50x5 81x55x6	28.72 36.52
11	Surface	14/01/2025	541854.49	5256473.73	0	5	34x32x4	2.45
12	Surface	14/01/2025	541851.93	5256466.74	0	5		
13	Surface	14/01/2025	541837.85	5256468.73	0	5	24x12x4	0.24
14	Surface	14/01/2025	541822.52	5256488.36	0	5	24x17x5 28x27x5 33x24x5	0.21 3.61 2.79
15	Surface	22/01/2025	541850.77	5256478.31	0	5	30x27x5	2.63
16 PT07	Excavation	16/01/2025	541830	5256489	0.1	5	29x29x4 37x30x5 21x10x3	3.29 3.78 1.84

Due to the presence of ACM on the surface of the Site, the NEPM (NEPC 2013) guidelines thresholds are triggered for both visible asbestos and visual aesthetics.

The natural soil was not tested for asbestos fibres, given there is a cleanup requirement to ensure there is no visible asbestos in the top 100mm of soil. A clean up method would see all potential ACM in the top 100mm including fibres within the topsoil layer removed from the Site.

6.2 Soil Profiles

Soil profiles were investigated using a combination of:

- Direct push core sampling through deep fill areas
- Hand excavations in areas where shallow fill or topsoil is observed.

Drilling and excavation locations are presented in Map 4 with soil layering descriptions summarised in Table 10 to Table 12 and bore logs presented in Appendix 7. The geology of the Site is not consistent with MRT mapping with all boreholes intercepting Quaternary sand aeolian deposits.

6.2.1 FILL (Layers 1 to 5)

Investigated fill thicknesses within the stockpile are up to 3.9m (PT04), which is the maximum depth limit which has modelled based on 2013 to 2019 LIDAR comparisons. The FILL comprises predominantly SAND with trace amounts of roots. The majority (90%) of the stockpile comprises SAND with the exception for Layer 2 which comprises SAND with gravel, mixed with up to 15 to 20% basalt cobbles. Organic matter makes up a very small proportion of the soil mass (estimated to be less than 1%).

There are locations across the Site where asbestos is encountered on surface, and this soil is generally not categorised as FILL (often categorised as topsoil) unless the asbestos has been encountered within the soil unless the soil is discernibly fill.

6.2.2 Natural Soil Profile (Layers 6 to 10)

Natural soils layers comprise well graded and poorly graded sand.

Table 10 Layer 6: FILL: SAND trace gravel, trace silt, dark greyish brown, well sorted, fine to medium grained sand SW

Hole ID	PT32	PT35	PT36	PT37	PT40	PT41	PT42	PT43
Depth to (m)	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1

Table 11 Layer 7: TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand. SP-SM

Hole ID	PT25	PT26	PT27	PT28	PT29	PT30	PT31	PT33	PT34	PT36	PT38	PT39
Depth to (m)	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.3	0.1	0.1

6.2.3 Asbestos Screening

Asbestos was encountered in borehole PT07 near the at a depth of 0.1m. This was the only sample of asbestos which was encountered within the soil and not on the surface of this soil. This result indicates there may have been reworking of the topsoil.

Table 12 Summary of Site soil conditions

#	Layer	Details	USCS	PT01	PT02	PT03	PT04	PT05	PT06	PT07	PT08	PT09	PT10	PT11	PT12
1	SAND	FILL: SAND, very pale yellow, well sorted	SW									0-0.3		0-0.3	
2	SAND	FILL: SAND with gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand; angular gravel; 15% BASALT cobbles	SP				0-1.4				0-0.4	0.3-0.7		0.3-0.6	0-0.6
3	SAND	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand	SP	0-1.1	0-1.4	0-1	1.4-2.2	0-1	0-1.5		0.4-0.6		0-0.7		
4	SAND	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand	SP	1.1-2.2	1.4-2.5	1-2.5	2.2-3.9	1-2.7	1.5-2.9				0.7-1.5		
7	SAND	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand	SP-SM							0-0.2					
8	SAND	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand	SM	2.2-2.3		2.5-2.6	3.9-4.1	2.7-2.9	2.9-3		0.6-0.7	0.7-0.8	1.5-1.6		0.6-0.8
9	SAND	SAND, pale brown, well sorted, fine to medium grained sand	SW			2.6-3.5	4.1-4.2	2.9-3	3-3.1		0.7-1	0.8-1	1.6-1.7	0.6-1	
10	SAND	SAND trace silt/clay, light yellowish brown, poorly sorted, fine to medium grained sand	SP-SM							0.2-0.3					

Table 12 (cont)

#	Layer	Details	USCS	PT13	PT14	PT15	PT16	PT17	PT18	PT19	PT20	PT21	PT22	PT23	PT24	PT44
1	SAND	FILL: SAND, very pale yellow, well sorted	SW													
2	SAND	FILL: SAND with gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand; angular gravel; 15% BASALT cobbles	SP	0.2-0.9	0-1	0-0.1										
3	SAND	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand	SP	0-0.2			0-0.9				0-2.5	0-2	0-1.6	0-1.5	0-0.4	0-1.7
4	SAND	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand	SP													1.7-2.6
5	SAND	FILL: SAND, black, well sorted, fine to medium grained sand, with gravel, trace charcoal, trace silt, 5 % charcoal and roots; sub-angular gravel; 20% DOLERITE cobbles	SW					0-0.1								
7	SAND	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand	SP-SM						0-0.2	0-0.1						
8	SAND	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand	SM	0.9-1.2	1-1.2	0.1-0.2	0.9-1.1	0.1-0.2		0.1-0.3	2.5-2.7	2-2.2	1.6-1.8	1.5-1.6	0.4-0.6	2.6-2.8
9	SAND	SAND, pale brown, well sorted, fine to medium grained sand	SW	1.2-1.3		0.2-0.3		0.2-0.3	0.2-0.4	0.3-0.4	2.7-3	2.2-2.5	1.8-2		0.6-1	2.8-3
10	SAND	SAND trace silt/clay, light yellowish brown, poorly sorted, fine to medium grained sand	SP-SM													

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7 Analytical Results

The NATA laboratory certificates including sample receipt notification (SRN), chain of custody (COC), and certificates of analysis (COA) are provided in Appendix 5 and Appendix 6 respectively.

7.1 Health Screening Levels

7.1.1 Soil Testing

Soil laboratory testing results are compared with the nominated HSL threshold limit guidelines in Appendix 4 with results presented in Appendix 6 and Table 13.

Based on soil samples collected from the stockpile and proposed work area:

- Laboratory tests did not detect BTEX, naphthalene, F1, or F2, making it unlikely that hydrocarbons within the stockpile will pose a petroleum hydrocarbon vapour intrusion risk to commercial workers.

Table 13 Analyte Detections in Soil Samples (Highlighted Where NEPM HSL D Guideline Limits for Commercial Use are Exceeded)

Sample	Soil Layer	Date	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	F1	F2
		Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		LOR	0.2	0.5	0.5	0.5	1.0	10	50
PT01 2.0	**1**	22/01/2025	<	<	<	<	<	<	<
PT10 0.5	**1**	22/01/2025	<	<	<	<	<	<	<
PT10 1.5	**1**	22/01/2025	<	<	<	<	<	<	<
PT12 0.3	**1**	22/01/2025	<	<	<	<	<	<	<
PT12 0.7	**1**	22/01/2025	<	<	<	<	<	<	<
PT13 1.0	**1**	22/01/2025	<	<	<	<	<	<	<
PT16 1.0	**1**	22/01/2025	<	<	<	<	<	<	<
PT20 0.5	**1**	22/01/2025	<	<	<	<	<	<	<
PT20 2.5	**1**	22/01/2025	<	<	<	<	<	<	<
PT28 0.0	**1**	22/01/2025	<	<	<	<	<	<	<
PT34 0.1	**1**	22/01/2025	<	<	<	<	<	<	<
PT36 0.0	**1**	22/01/2025	<	<	<	<	<	<	<
PT40 0.0	**1**	22/01/2025	<	<	<	<	<	<	<
PT42 0.0	**1**	22/01/2025	<	<	<	<	<	<	<
PT44 1.5	**1**	22/01/2025	<	<	<	<	<	<	<
PT44 2.6	**1**	22/01/2025	<	<	<	<	<	<	<
PT45 0.0	**1**	22/01/2025	<	<	<	<	<	<	<
Duplicate	**1**	22/01/2025	<	<	<	<	<	<	<

Note:
1) Highlighted cells: correspond to analytical result exceedances above guideline limits;
2) Bold: correspond to analytical result detections (above LOR)
3) ' = 1 to 2 x IL; '' = 2 to 5 x IL; ''' = 5 to 10 x IL; '''' = 10 to 20 x IL; ''''' = 20 to 50 x IL; ''''' = >50 x IL

7.2 Health Investigation Levels

The results of soil laboratory tests are compared against nominated HIL threshold limit guidelines presented in Appendix 4 with results presented in Appendix 6 and Table 14.

Based on soil samples collected from the stockpile and proposed work area:

- No laboratory detections or concentrations of heavy metals, PAH, or PFAS compounds exceeded NEPM (ASC) commercial/industrial land use guidelines for assessing soil ingestion or dust inhalation risk to commercial workers.

Table 14 Analyte Detections in Soil Samples (Highlighted Where NEPM Commercial/Industrial HIL Guideline Limits are Exceeded)[Error! Bookmark not defined.]

Sample	Soil Layer	Date	Land Use	Arsenic	Cadmium	Chromium Total	Copper	Lead	Nickel	Zinc	Mercury (inorganic)	Carcinogenic PAHs (as BaP TEQ)	Total PAHs	PFOA	PFHxS and PFOS
		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
		LOR		5	1	2	5	5	2	5	0.1	0.5	0.5	0.0002	0.0002
HIL Class D Limit				**3,000**	**900**		**240,000**	**1,500**	**6,000**	**400,000**	**730**	**40**	**4,000**	**20**	**50**
PT01 2.0	**1**	22/1/25	D	<	<	**3**	<	<	<	<	<	<	<		
PT10 0.5	**1**	22/1/25	D	<	<	**8**	<	<	**12**	**10**	<	<	<	<	**0.0018**
PT10 1.5	**1**	22/1/25	D	<	<	**3**	**6**	<	<	**7**	<	<	<	<	**0.0012**
PT12 0.3	**1**	22/1/25	D	<	<	**7**	<	<	**13**	**6**	<	<	<	<	<
PT12 0.7	**1**	22/1/25	D	<	<	**4**	<	<	**4**	**6**	<	<	<	<	**0.0014**
PT13 1.0	**1**	22/1/25	D	<	<	**3**	<	<	<	**6**	<	<	<	**0.0003**	**0.0068**
PT16 1.0	**1**	22/1/25	D	<	<	**3**	<	<	<	**9**	<	<	<	<	**0.0023**
PT20 0.5	**1**	22/1/25	D	<	<	**4**	<	<	<	<	<	<	<	<	**0.0077**
PT20 2.5	**1**	22/1/25	D	<	<	**4**	<	<	<	<	<	<	<	<	**0.0006**
PT28 0.0	**1**	22/1/25	D	<	<	**3**	**7**	<	<	**10**	<	<	<	<	**0.0011**
PT34 0.1	**1**	22/1/25	D	<	<	**5**	<	<	<	**8**	<	<	<	<	**0.0004**
PT36 0.0	**1**	22/1/25	D	<	<	**4**	**7**	**6**	<	**15**	<	<	<	<	**0.0008**
PT40 0.0	**1**	22/1/25	D	<	<	**4**	<	<	**2**	**10**	<	<	<	<	**0.003**
PT42 0.0	**1**	22/1/25	D	<	<	**4**	<	<	<	**9**	<	<	<	<	**0.0012**
PT44 1.5	**1**	22/1/25	D	<	<	**4**	<	<	<	<	<	<	<	<	**<**
PT44 2.6	**1**	22/1/25	D	<	<	**3**	<	<	<	**5**	<	<	<	<	**0.0012**
PT45 0.0	**1**	22/1/25	D	<	<	**3**	<	<	<	**8**	<	<	<	<	**0.0005**
Duplicate	**1**	22/1/25	D	<	<	**4**	<	<	<	**8**	<	<	<	<	**0.0014**

1) Highlighted cells: correspond to analytical result exceedances above guideline limits;
2) Bold: correspond to analytical result detections (above LOR)
3) ' = 1 to 2 x IL; '' = 2 to 5 x IL; ''' = 5 to 10 x IL; '''' = 10 to 20 x IL; ''''' = 20 to 50 x IL; ''''' = >50 x IL

7.3 Ecological Investigation Levels

The results of the soil laboratory tests are compared against nominated EIL threshold limit guidelines in Appendix 4 with results presented in Table 15.

Based on soil samples collected from the stockpile and proposed work area:

- There were either NO laboratory detections or NO concentrations of heavy metals, naphthalene nor PFAS compounds exceeding NEPM (ASC) commercial/industrial land use to evaluate risks to terrestrial ecosystems

Table 15 Analyte Detections in Soil Samples (Highlighted Where NEPM Commercial/Industrial EIL Guideline Limits are Exceeded)

Sample	Soil Layer	Date	Zinc	Copper (CEC)	Copper (pH)	Chromium	Nickel	Lead	Arsenic	Naphthalene	PFOS - Indirect Paved (HEPA 2025)	PFOS - Indirect Paved (HEPA 2025)
		Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		LOR	5	5	5	2	2	5	5	0.5	0.0002	0.0002
PT01 2.0	**1**	22/01/25	<	<	<	**3**	<	<	<	<	**0.002**	<
PT10 0.5	**1**	22/01/25	**10**	<	<	**8**	**12**	<	<	<	**0.0014**	<
PT10 1.5	**1**	22/01/25	**7**	**6**	**6**	**3**	<	<	<	<	**0.0008**	<
PT12 0.3	**1**	22/01/25	**6**	<	<	**7**	**13**	<	<	<	<	<
PT12 0.7	**1**	22/01/25	**6**	<	<	**4**	**4**	<	<	<	**0.0009**	<
PT13 1.0	**1**	22/01/25	**6**	<	<	**3**	<	<	<	<	**0.0011**	**0.0003**
PT16 1.0	**1**	22/01/25	**9**	<	<	**3**	<	<	<	<	**0.0016**	<
PT20 0.5	**1**	22/01/25	<	<	<	**4**	<	<	<	<	**0.0077**	<
PT20 2.5	**1**	22/01/25	<	<	<	**4**	<	<	<	<	**0.0006**	<
PT28 0.0	**1**	22/01/25	**10**	**7**	**7**	**3**	<	<	<	<	**0.0011**	<
PT34 0.1	**1**	22/01/25	**8**	<	<	**5**	<	<	<	<	**0.0004**	<
PT36 0.0	**1**	22/01/25	**15**	**7**	**7**	**4**	<	**6**	<	<	**0.0008**	<
PT40 0.0	**1**	22/01/25	**10**	<	<	**4**	**2**	<	<	<	**0.003**	<
PT42 0.0	**1**	22/01/25	**9**	<	<	**4**	<	<	<	<	**0.0012**	<
PT44 1.5	**1**	22/01/25	<	<	<	**4**	<	<	<	<	**0.0194**	<
PT44 2.6	**1**	22/01/25	**5**	<	<	**3**	<	<	<	<	**0.001**	<
PT45 0.0	**1**	22/01/25	**8**	<	<	**3**	<	<	<	<	**0.0005**	<
Duplicate	**1**	22/01/25	**8**	<	<	**4**	<	<	<	<	**0.0014**	<

Note:
1) Highlighted cells: correspond to analytical result exceedances above guideline limits;
2) Bold: correspond to analytical result detections (above LOR)
3) ' = 1 to 2 x IL; '' = 2 to 5 x IL; ''' = 5 to 10 x IL; '''' = 10 to 20 x IL; ''''' = 20 to 50 x IL; ''''' = >50 x IL

7.4 Ecological Screening Levels

Laboratory test results are compared against ESL threshold limit guidelines in Appendix 4 with results presented in Table 16.

Based on soil samples collected from the stockpile and proposed work area:

- Laboratory tests did not detect any concentrations of F1 to F4 hydrocarbons, BTEX, or Benzo(a)pyrene compounds that exceed NEPM (ASC) commercial/industrial land use guidelines for assessing risks to terrestrial ecosystems.

Table 16 Analyse Detections in Soil Samples (Highlighted Where NEPM Commercial/Industrial ESL Guideline Limits are Exceeded)

Sample	Soil Layer	Date	F1	F2	F3	F4	Benzene	Toluene	Ethylbenzene	Total Xylenes	Benzo(a)pyrene
		Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		LOR	10	50	100	100	0.2	0.5	0.5	0.5	0.5
ESL Limits (Coarse)			**215**	**170**	**1700**	**3300**	**75**	**135**	**165**	**180**	**0.7**
PT01 2.0	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT10 0.5	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT10 1.5	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT12 0.3	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT12 0.7	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT13 1.0	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT16 1.0	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT20 0.5	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT20 2.5	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT28 0.0	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT34 0.1	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT36 0.0	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT40 0.0	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT42 0.0	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT44 1.5	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT44 2.6	**1**	22/01/25	<	<	<	<	<	<	<	<	<
PT45 0.0	**1**	22/01/25	<	<	<	<	<	<	<	<	<
Duplicate	**1**	22/01/25	<	<	<	<	<	<	<	<	<

Note:
1) Highlighted cells: correspond to analytical result exceedances above guideline limits;
2) Bold: correspond to analytical result detections (above LOR)
3) ' = 1 to 2 x IL; '' = 2 to 5 x IL; ''' = 5 to 10 x IL; '''' = 10 to 20 x IL; ''''' = 20 to 50 x IL; ''''' = >50 x IL

7.5 Airports Environmental Protection Regulations

Soil analysis results were compared against Airport (Environment Protection) Regulations (1997) in Table 17 and Table 18 with findings indicating there are no guideline exceedances for heavy metals not hydrocarbons respectively.

Table 17 Analyte Detections of Metals and in Soil Samples (Highlighted where Airport Environment Protection Regulations (1997) Guidelines Limits are Exceeded)

Sample	Soil Layer	Date	Zinc	Copper	Chromium	Nickel	Lead	Arsenic
		Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EIL Class C/I		**LOR**	**5**	**5**	**2**	**2**	**5**	**5**
Airport Guideline IL			**35,000**	**5,000**	**500**	**3,00**	**1,500**	**500**
PT01 2.0	**1**	22/01/25	<	<	**3**	<	<	<
PT10 0.5	**1**	22/01/25	**10**	<	**8**	**12**	<	<
PT10 1.5	**1**	22/01/25	**7**	**6**	**3**	<	<	<
PT12 0.3	**1**	22/01/25	**6**	<	**7**	**13**	<	<
PT12 0.7	**1**	22/01/25	**6**	<	**4**	**4**	<	<
PT13 1.0	**1**	22/01/25	**6**	<	**3**	<	<	<
PT16 1.0	**1**	22/01/25	**9**	<	**3**	<	<	<
PT20 0.5	**1**	22/01/25	<	<	**4**	<	<	<
PT20 2.5	**1**	22/01/25	<	<	**4**	<	<	<
PT28 0.0	**1**	22/01/25	**10**	**7**	**3**	<	<	<
PT34 0.1	**1**	22/01/25	**8**	<	**5**	<	<	<
PT36 0.0	**1**	22/01/25	**15**	**7**	**4**	<	**6**	<
PT40 0.0	**1**	22/01/25	**10**	<	**4**	**2**	<	<
PT42 0.0	**1**	22/01/25	**9**	<	**4**	<	<	<
PT44 1.5	**1**	22/01/25	<	<	**4**	<	<	<
PT44 2.6	**1**	22/01/25	**5**	<	**3**	<	<	<
PT45 0.0	**1**	22/01/25	**8**	<	**3**	<	<	<
Duplicate	**1**	22/01/25	**8**	<	**4**	<	<	<

Table 18 Analyte Detections of Hydrocarbons and in Soil Samples (Highlighted where Airport Environment Protection Regulations (1997) Guideline Limits are Exceeded)

Sample	Soil Layer	Date	Benzene	Toluene	Ethylbenzene	Xylenes	C6-C10 Fraction	>C10-C40 (Sum of Total)	Total PAHs	Benzo(a)pyrene
		Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		LOR	0.2	0.5	0.5	0.5	10	50	0.5	**0.5**
Airport Guideline IL			1	130	50	25	800	5,000	**4000**	**100**
PT01 2.0	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT10 0.5	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT10 1.5	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT12 0.3	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT12 0.7	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT13 1.0	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT16 1.0	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT20 0.5	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT20 2.5	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT28 0.0	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT34 0.1	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT36 0.0	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT40 0.0	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT42 0.0	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT44 1.5	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT44 2.6	**1**	22/01/2025	<	<	<	<	<	<	<	<
PT45 0.0	**1**	22/01/2025	<	<	<	<	<	<	<	<
Duplicate	**1**	22/01/2025	<	<	<	<	<	<	<	<

Note:

1) Highlighted cells: correspond to analytical result exceedances above guideline limits;

2) Bold: correspond to analytical result detections (above LOR)

3) ' = 1 to 2 x IL; '' = 2 to 5 x IL; ''' = 5 to 10 x IL; '''' = 10 to 20 x IL; ''''' = 20 to 50 x IL; ''''' = >50 x IL

7.6 Asbestos

Three ACM samples and surrounding surface soil were bagged up and sent to ALS for analysis to determine the asbestos type as well as the presence of trace asbestos. It is concluded from the assessment that:

- Trace asbestos was not detected in any of the soil samples
- Chrysotile was detected in all samples and crocidolite was detected in PT07 0.0m
- The concentration as ACM was not measured given it was an ACM sample.
- One asbestos fibre bundle (approx 0.5 x 0.5 x 0.5mm) was encountered in PT19 0.0m.

Table 19 Laboratory Results for the Identification of Asbestos in Soils

Sample	Asbestos Detected	Asbestos (Trace)	Asbestos Type	Concentration as ACM	Concentration as AF or FA	Description	Synthetic Mineral Fibre	Organic Fibre	Sample weight (dry)
Units	g/kg			%	%		--	--	g
LOR	0.1			0.01	0.001				0.01
NEPM 2013 Bonded asbestos material		Yes		0.05					
NEPM 2013 Friable asbestos and asbestos fines					0.001				
NEPM 2013 Asbestos visible on ground surface									
PT07 0.0m	Yes	No	Ch + Cr	NM*	NE^	Brown sandy soil with organic matter plus multiple asbestos containing material fragments approx 35 x 25 x 3mm.	No	Yes	233
PT19 0.0m	Yes	No	Ch	NM*	NE^	Brown sandy soil with organic matter plus one asbestos containing material fragment approx 20 x 15 x 3mm and one asbestos fibre bundle approx 0.5 x 0.5 x 0.5mm.	No	Yes	233
PT32 0.0m	Yes	No	Ch	NM*	NE^	Brown sandy soil with organic matter plus one asbestos containing material fragment approx 15 x 10 x 3mm.	No	Yes	592

NM* Not measured
NE^ Not estimated
'Am' Amosite (brown asbestos)
'Cr' Crocidolite (blue asbestos)
'Ch' Chrysotile (white asbestos)
'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
'No*' - No asbestos found at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

7.7 EPA Information Bulletin IB105

Laboratory results are compared against Tasmanian EPA Information Bulletin IB105 in Table 20.

IB105 defines the criteria used by the Environment Protection Authority (EPA) for the classification of contaminated soils that require treatment and/or off-site disposal. IB105 outlines the management of each classification in accordance with the 2010 Environmental Management and Pollution Control (Waste Management) Regulations (the 'Regulations').

The guidelines are used to determine whether potentially contaminated soil is suitable for disposal at a landfill site and in assessing alternative options for contaminated soil management.

The EPA uses four categories to classify contaminated soil: (Level 1) Fill Material; (Level 2) Low Level Contaminated Soil; (Level 3) contaminated soil; and (Level 4) Contaminated Soil for remediation.

Findings indicate that samples collected from the Site align with a Level 1 IB105 classification.

Table 20 Tasmanian Environmental Protection Authority Information Bulletin 105 (highlighted if exceeding level 1 to level 4 landfill disposal limits).

Sample	Soil Layer	Date	Barium	Cadmium	Chromium (total)	Copper	Lead	Mercury (total)	Nickel	Zinc	Benzo(a)pyrene	C6-C9 petroleum hydrocarbons	C10-C36 petroleum hydrocarbons	Polycyclic aromatic hydrocarbons (total)	Benzene	Toluene	Ethylbenzene	Xylene (total)
Level 1			<300	<3	<50	<100	<300	<1	<60	<200	<0.08	<65	<1000	<20	<1	<1	<3	<14
Level 2			300	3	50	100	300	1	60	200	0.08	65	1000	20	1	1	3	14
Level 3			3000	40	500	2000	1200	30	600	14000	2	650	5000	40	5	100	100	180
Level 4			30000	400	5000	7500	3000	110	3000	50000	20	1000	10000	200	50	1000	1080	1800
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
LOR			10	1	2	5	5	0	2	5	1	10	50	1	0	1	1	1
Average					4	7	6		8	8								
PT01 2.0	**1**	22/01/2025	<	<	3	<	<	<	<	<	<	<	<	<	<	<	<	<
PT10 0.5	**1**	22/01/2025	<	<	8	<	<	<	12	10	<	<	<	<	<	<	<	<
PT10 1.5	**1**	22/01/2025	<	<	3	6	<	<	<	7	<	<	<	<	<	<	<	<
PT12 0.3	**1**	22/01/2025	<	<	7	<	<	<	13	6	<	<	<	<	<	<	<	<
PT12 0.7	**1**	22/01/2025	<	<	4	<	<	<	4	6	<	<	<	<	<	<	<	<
PT13 1.0	**1**	22/01/2025	<	<	3	<	<	<	<	6	<	<	<	<	<	<	<	<
PT16 1.0	**1**	22/01/2025	<	<	3	<	<	<	<	9	<	<	<	<	<	<	<	<
PT20 0.5	**1**	22/01/2025	<	<	4	<	<	<	<	<	<	<	<	<	<	<	<	<
PT20 2.5	**1**	22/01/2025	<	<	4	<	<	<	<	<	<	<	<	<	<	<	<	<
PT28 0.0	**1**	22/01/2025	<	<	3	7	<	<	<	10	<	<	<	<	<	<	<	<
PT34 0.1	**1**	22/01/2025	<	<	5	<	<	<	<	8	<	<	<	<	<	<	<	<
PT36 0.0	**1**	22/01/2025	<	<	4	7	6	<	<	15	<	<	<	<	<	<	<	<
PT40 0.0	**1**	22/01/2025	<	<	4	<	<	<	2	10	<	<	<	<	<	<	<	<
PT42 0.0	**1**	22/01/2025	<	<	4	<	<	<	<	9	<	<	<	<	<	<	<	<
PT44 1.5	**1**	22/01/2025	<	<	4	<	<	<	<	<	<	<	<	<	<	<	<	<
PT44 2.6	**1**	22/01/2025	<	<	3	<	<	<	<	5	<	<	<	<	<	<	<	<
PT45 0.0	**1**	22/01/2025	<	<	3	<	<	<	<	8	<	<	<	<	<	<	<	<
PT46 0.0	**1**	22/01/2025	<	<	3	<	<	<	<	9	<	<	<	<	<	<	<	<
Duplicate	**1**	22/01/2025	<	<	4	<	<	<	<	8	<	<	<	<	<	<	<	<

Note:

1) Highlighted cells: correspond to analytical result exceedances above Level 1 to Level 4 guideline limits

2) Bold: correspond to analytical result detections (above LOR)

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8 Quality Assurance/ Quality Control

Envirotech data quality assurance (QA) procedures were adopted, and quality control (QC) samples were collected to support the provision of reliable data upon which decisions can be made. The adopted QA/QC approach was based on the guidance provided from the following sources:

- Australian Standard (AS) 4482.1-2005 Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Nonvolatile and semivolatile compounds.
- Australian Standard (AS) 4482.2-1999 Guide to the sampling and investigation of potentially contaminated soil, Part 2: Volatile Substances
- National Environment Protection Council (NEPC) – National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B (3) Guideline on Laboratory Analysis of Potentially Contaminated Soils.
- United States Environmental Protection Agency – Guidance on Systematic Planning Using the Data Quality Objectives Process EPA QA/G-4.
- United States Environmental Protection Agency – Guidance on Environmental Data Verification and Data Validation EPA QA/G-8.

Laboratory quality control documentation is presented in Appendix 7 and both the field data and laboratory data validation and quality review are provided within Appendix 8. The findings indicate that the data are considered suitable for use to form conclusions relating to the contamination status within the proposed work area.

9 Conclusions

The following are concluded from the detailed Site investigation:

- It is concluded from this assessment that **none** of the soil samples collected from the Site (within the stockpile and at the Production Kitchen Site) have COPC's (including PFAS) that exceed NEPM 2013 commercial/industrial guideline limits.
- There is a low risk that soil within the stockpile is considered as a hazardous substance if the soil is to be used in a manned which does not permit PFAS exposure to secondary receptors.
- PFAS compounds have been identified in the soil at levels that permit its use as fill material for the production kitchen site. This is contingent upon ensuring that more than 80% of the production kitchen site surface is paved and appropriately managed to limit exposure to secondary consumers, in accordance with a PFAS soil management plan.
- Residual asbestos-containing material (ACM) has been detected on the surface of the Production Kitchen Site at a depth ranging from 0 to 0.1 meters. The exposed asbestos at the surface does not comply with NEPM 2013 guidelines. It is necessary to determine if asbestos fibres (AF and FA) are present on the surface of the site in quantities exceeding NEPM 2013 guidelines near where ACM has been found. Alternatively, all surface soil in these areas may be removed, followed by validation sampling to confirm compliance with NEPM 2013 guidelines.
- Asbestos has **not** been detected in the stockpile, and the likelihood of the stockpile containing asbestos concentrations exceeding NEPM (2013) guideline limits is low.

10 Recommendations

The following are recommended

- A separate asbestos investigation report is required to ascertain the presence or absence of asbestos fibres in the surface soil within Areas A and B. This assessment is required to determine any potential risks to future site workers associated with soil disturbance. This assessment report is to refer to this detailed site investigation report and recommendation.
- The utilization of stockpiled fill at the Production Kitchen Site is deemed non-hazardous, provided that the soil remains adequately separated from secondary consumers at the filled location. In addition to ensuring that pavement coverage is no less than 80%, a site-specific PFAS soil management plan must be developed to reduce exposure of secondary consumers to PFAS in accordance with HEPA 2025b.

Kris J Taylor BSc (Hons) | Environmental & Engineering Geologist

Director

Enviro-Tech Consultants Pty. Ltd.

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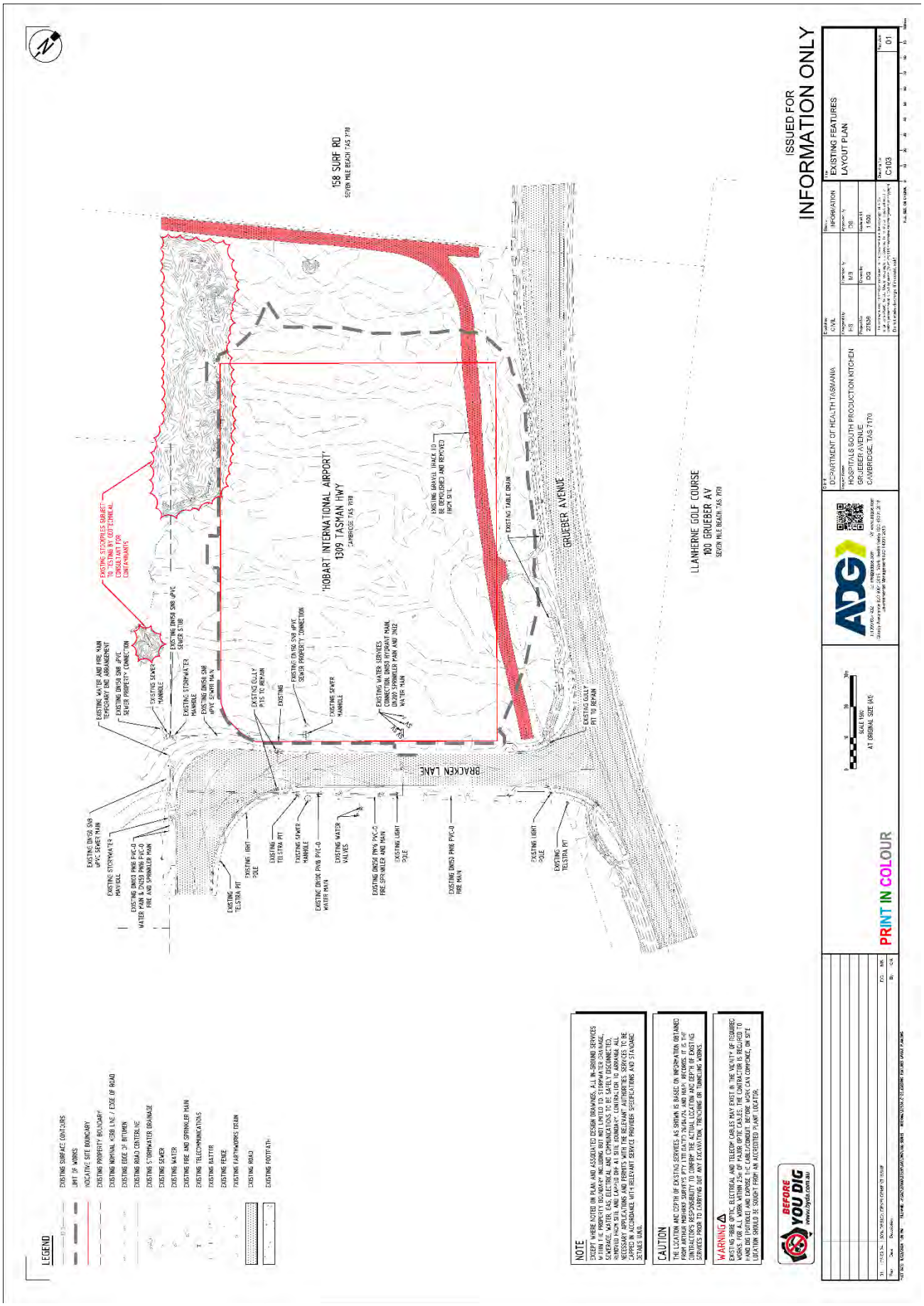
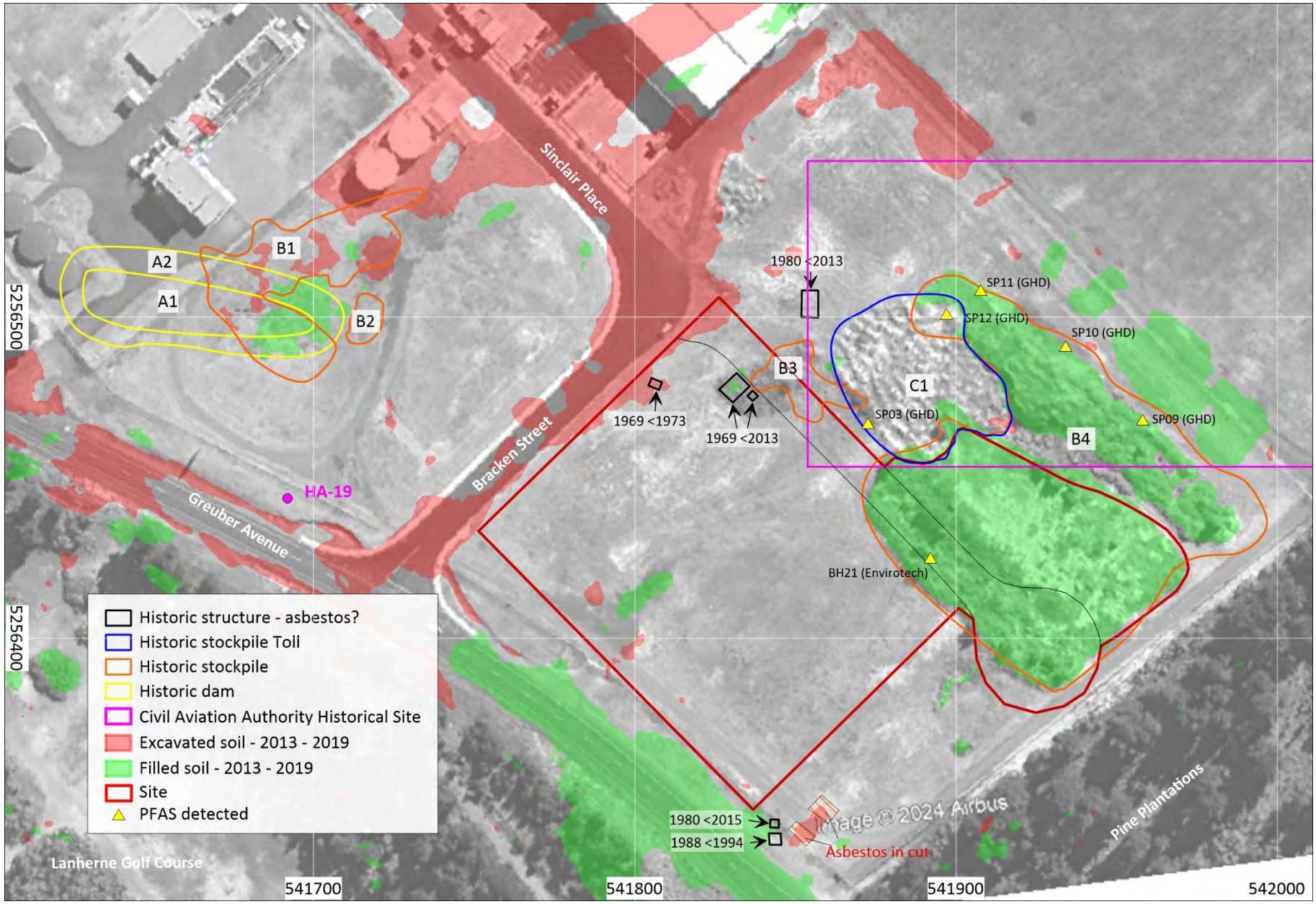
HEPA 2025b. PFAS NEPM 3.0. Supporting Document 2. Derivation of ecological guidelines for wildlife diet and indirect soil exposure to perfluorooctanoic acid (PFOA) perfluorooctane sulfonate (PFOS) and perfluorohexane sulfonate (PFHxS)National Chemicals Working Group of the Heads of EPA Australia and New Zealand

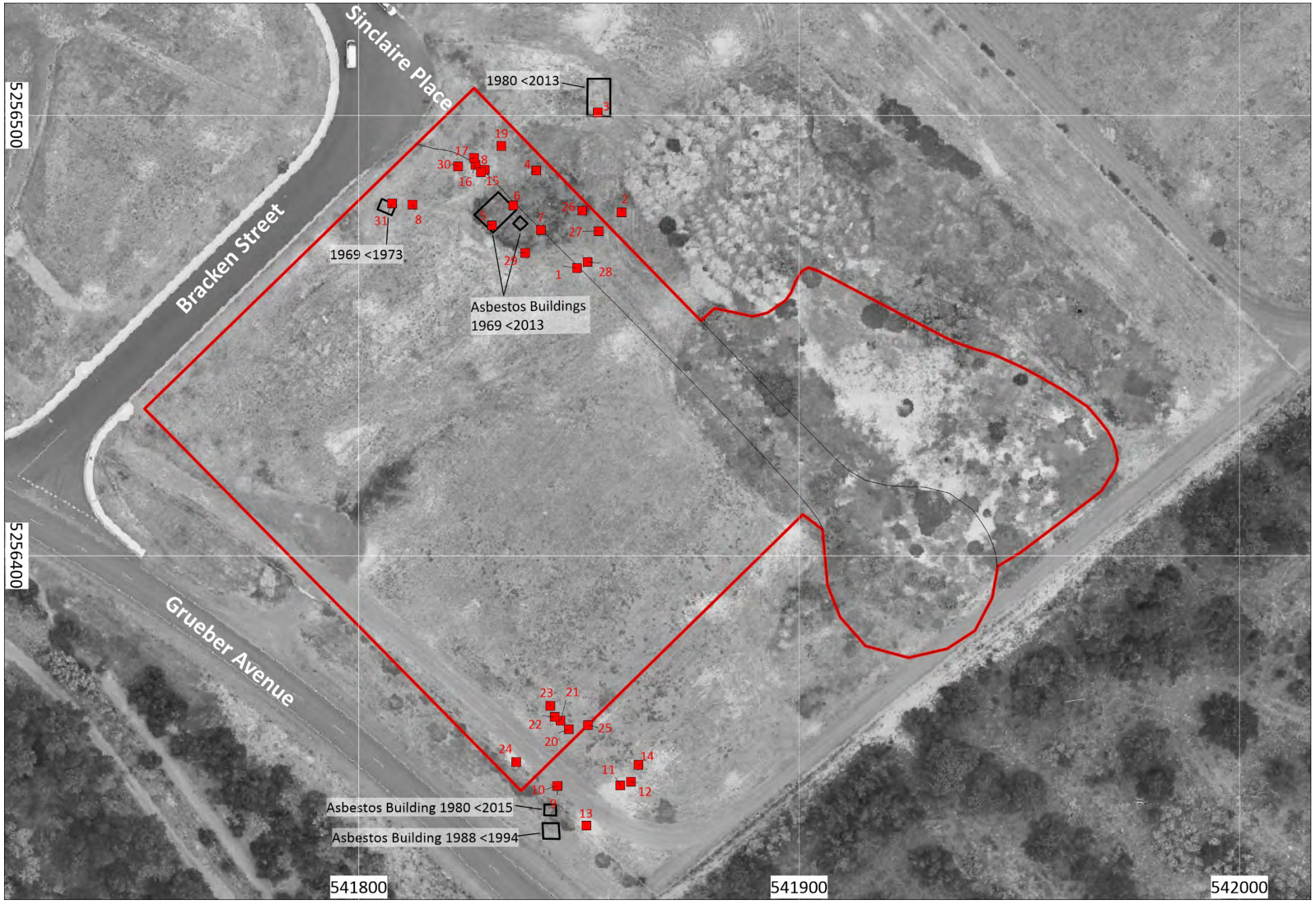
Appendix 1 Proposed Site Works



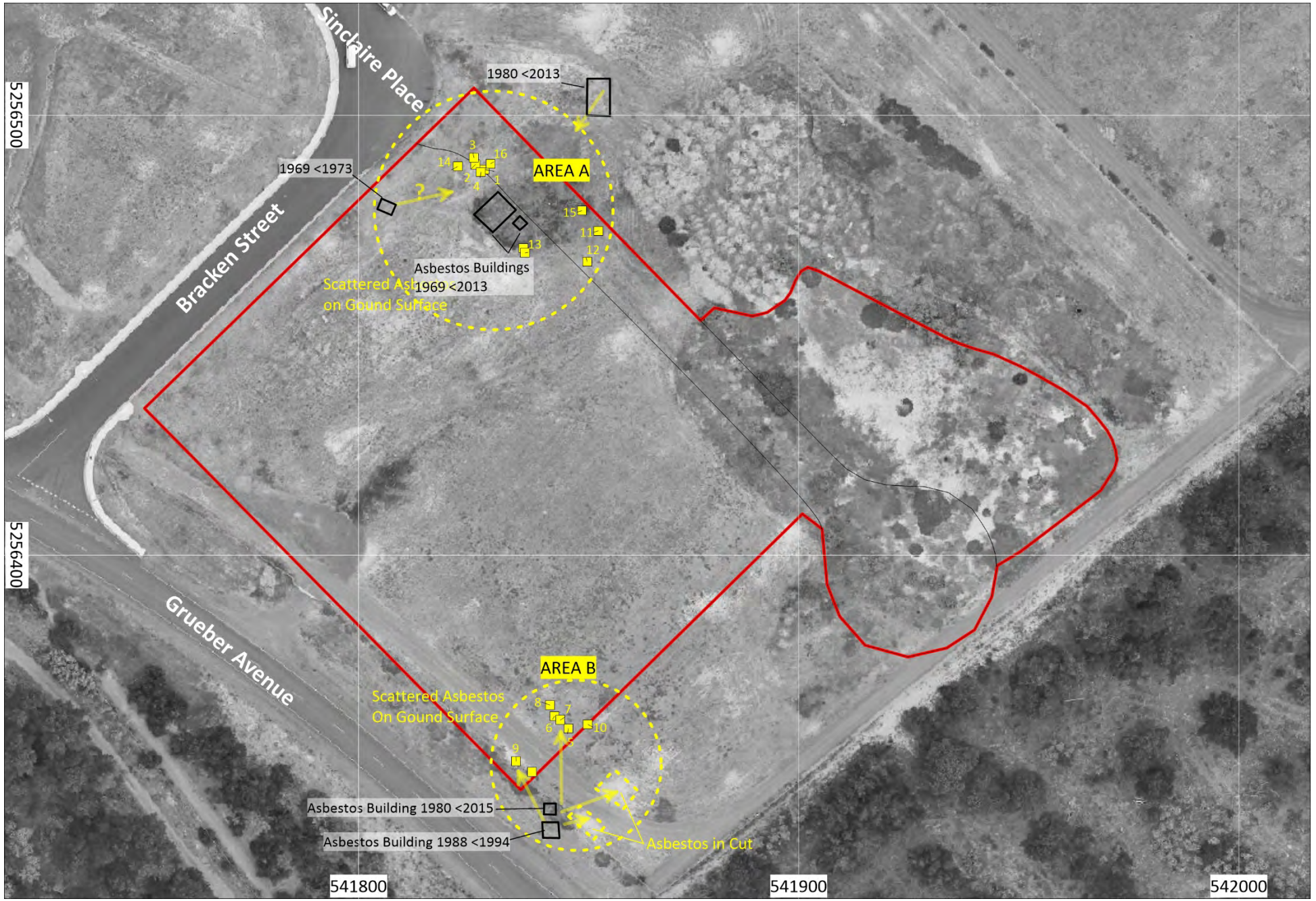
Appendix 2 Mapping



Map 1 Potential Contaminating Activities, Areas of Potential Concern and Surrounding Land Use



Map 2 Site Walkover Photographic Points



Map 3 Mapped Asbestos Distribution

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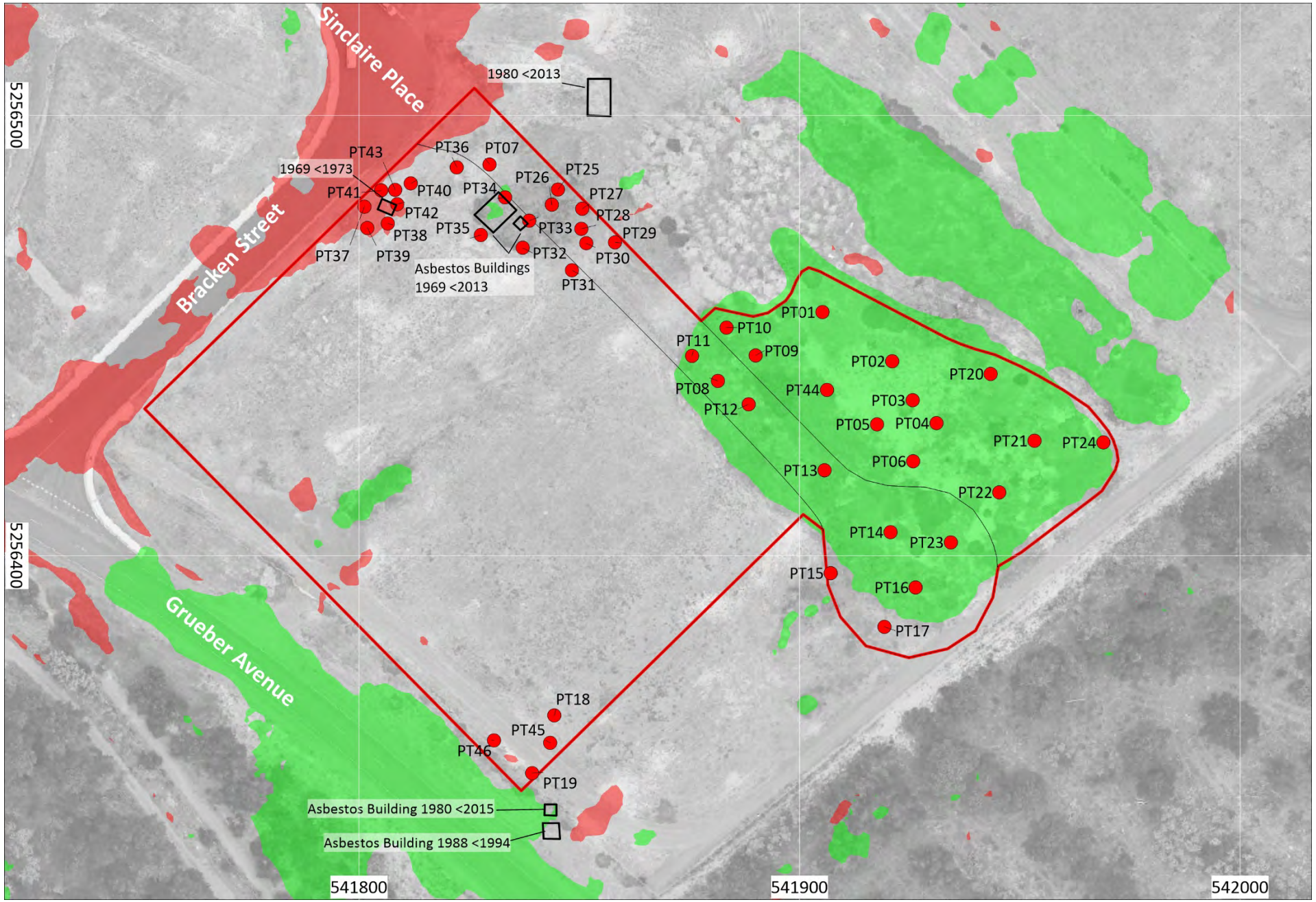

Map 4 Core Hole and Hand Excavation Testing Locations with Cut (red) and fill(green) locations.

Appendix 3 Borehole Logs

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ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541905
NORTHING (GDA94 Zone 55): 5256455

Point : PT01
DATE TESTED: 14/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 6.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: AMS Powerprobe 9120 RAP
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, sandstone, dolerite		Dry	3		0.0 0.5 1.0		
1.1	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Moist	4		1.5 2.0		PT01 2.0
2.2	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			8				
	Terminated at 2.3 m Depth							

GROUNDWATER: Not Encountered

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ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541921
NORTHING (GDA94 Zone 55): 5256444

Point : PT02
DATE TESTED: 14/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 6.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: AMS Powerprobe 9120 RAP
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, roots , sandstone, dolerite		Dry	3		0.0 0.5 1.0		
1.4	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Moist	4		1.5 2.0		
	Terminated at 2.5 m Depth					2.5		

GROUNDWATER: Not Encountered

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ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541926
NORTHING (GDA94 Zone 55): 5256435

Point : PT03
DATE TESTED: 14/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 6.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: AMS Powerprobe 9120 RAP
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, bitumen, sandstone		Dry	3		0.0		
						0.5		
1	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Slightly Moist	4		1.0		
						1.5		
						2.0		
2.5	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			8		2.5		
2.6	SAND, pale brown, well sorted, fine to medium grained sand			9		3.0		
	Terminated at 3.5 m Depth					3.5		

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541931
NORTHING (GDA94 Zone 55): 5256430

Point : PT04
DATE TESTED: 14/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 8.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: AMS Powerprobe 9120 RAP
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND with gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, concrete rubble, dolerite, wood fragments		Dry	2		0.0 0.5 1.0		
1.4	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Slightly Moist	3		1.5 2.0		
2.2	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Moist	4		2.5 3.0 3.5		
3.9	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand		Slightly Moist	8		4.0		
4.1	SAND, pale brown, well sorted, fine to medium grained sand			9				
	Terminated at 4.2 m Depth							

GROUNDWATER: Not Encountered

PAGE 1 of 1

enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541918
NORTHING (GDA94 Zone 55): 5256430

Point : PT05
DATE TESTED: 14/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 8.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: AMS Powerprobe 9120 RAP
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Slightly Moist	3		0.0 0.5 1.0		
1	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Moist	4		1.5 2.0 2.5		
2.7	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			8				
2.9	SAND, pale brown, well sorted, fine to medium grained sand			9		3.0		
	Terminated at 3 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541926
NORTHING (GDA94 Zone 55): 5256421

Point : PT06
DATE TESTED: 14/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 6.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: AMS Powerprobe 9120 RAP
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Slightly Moist	3		0.0 – 0.5 – 1.0 – 1.5		
1.5	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Moist	4		1.5 – 2.0 – 2.5		
2.9	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			8		3.0		
3	SAND, pale brown, well sorted, fine to medium grained sand			9				
	Terminated at 3.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541830
NORTHING (GDA94 Zone 55): 5256489

Point : PT07
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: Shovel
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand, asbestos, charcoal, roots		Slightly Moist	7		0.0		
0.2	SAND trace silt/clay, light yellowish brown, poorly sorted, fine to medium grained sand		Moist	10				
	Terminated at 0.3 m Depth							

GROUNDWATER: Not Encountered

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ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541882
NORTHING (GDA94 Zone 55): 5256440

Point : PT08
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 6.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND with gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Dry	2		0.0		
0.4	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, roots , charcoal, dolerite			3		0.5		
0.6				8				
0.7	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand		Slightly Moist	9		1.0		
	SAND, pale brown, well sorted, fine to medium grained sand							
	Terminated at 1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541890
NORTHING (GDA94 Zone 55): 5256446

Point : PT09
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 6.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND, very pale yellow, well sorted			1		0.0		
0.3	FILL: SAND with gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Dry	2		0.5		
0.7	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			8				
0.8	SAND, pale brown, well sorted, fine to medium grained sand			9		1.0		
	Terminated at 1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541883
NORTHING (GDA94 Zone 55): 5256452

Point : PT10
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 5.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Dry	3		0.0 0.5		PT10 0.5
0.7	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, dolerite		Slightly Moist	4		1.0		
1.5	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			8		1.5		PT10 1.5
1.6	SAND, pale brown, well sorted, fine to medium grained sand			9				
	Terminated at 1.7 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541876
NORTHING (GDA94 Zone 55): 5256445

Point : PT11
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND, very pale yellow, well sorted		Dry	1		0.0		
0.3	FILL: SAND with gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, dolerite		Slightly Moist	2		0.5		
0.6	SAND, pale brown, well sorted, fine to medium grained sand			9		1.0		
	Terminated at 1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541888
NORTHING (GDA94 Zone 55): 5256434

Point : PT12
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND with gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, dolerite		Dry	2		0.0 0.5		PT12 0.3
0.6	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			8				PT12 0.7
	Terminated at 0.8 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541906
NORTHING (GDA94 Zone 55): 5256419

Point : PT13
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, dolerite, roots		Dry	3		0.0		
0.2	FILL: SAND with gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, dolerite		Slightly Moist	2		0.5		
0.9	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			8		1.0		PT13 1.0
1.2	SAND, pale brown, well sorted, fine to medium grained sand			9				
	Terminated at 1.3 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541921
NORTHING (GDA94 Zone 55): 5256405

Point : PT14
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 5.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND with gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, dolerite		Slightly Moist	2		0.0 0.5		
1	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			8		1.0		
	Terminated at 1.2 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541907
NORTHING (GDA94 Zone 55): 5256396

Point : PT15
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 3.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND with gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, dolerite, roots		Slightly Moist	2		0.0		
0.1	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			8				
0.2	SAND, pale brown, well sorted, fine to medium grained sand			9				
	Terminated at 0.3 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541926
NORTHING (GDA94 Zone 55): 5256393

Point : PT16
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Slightly Moist	3		0.0 0.5		
0.9	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			8		1.0		PT16 1.0
	Terminated at 1.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541919
NORTHING (GDA94 Zone 55): 5256384

Point : PT17
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND, black, well sorted, fine to medium grained sand, with gravel, trace charcoal, trace silt, 5 % charcoal and roots, dolerite		Slightly Moist	5		0.0		
0.1				8				
0.2	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			9				
	SAND, pale brown, well sorted, fine to medium grained sand							
	Terminated at 0.3 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541844
NORTHING (GDA94 Zone 55): 5256364

Point : PT18
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: Shovel
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand		Slightly Moist	7		0.0		
0.2	SAND, pale brown, well sorted, fine to medium grained sand			9				
	Terminated at 0.4 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541839
NORTHING (GDA94 Zone 55): 5256351

Point : PT19
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 3.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: Shovel
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand			7		0.0		
0.1	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand		Slightly Moist	8				
0.3	SAND, pale brown, well sorted, fine to medium grained sand			9				
	Terminated at 0.4 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541943
NORTHING (GDA94 Zone 55): 5256441

Point : PT20
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 7.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: AMS Powerprobe 9120 RAP
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, roots		Slightly Moist	3		0.0 0.5 1.0 1.5 2.0		PT20 0.5
2.5	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			8		2.5		PT20 2.5
2.7	SAND, pale brown, well sorted, fine to medium grained sand			9		3.0		
	Terminated at 3 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541953
NORTHING (GDA94 Zone 55): 5256426

Point : PT21
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 6.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, shells, sandtone, roots		Dry	3		0.0 0.5 1.0 1.5		
2	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			8		2.0		
2.2	SAND, pale brown, well sorted, fine to medium grained sand		Slightly Moist	9		2.5		
	Terminated at 2.5 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541945
NORTHING (GDA94 Zone 55): 5256414

Point : PT22
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 5.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, dolerite, shells		Slightly Moist	3		0.0 0.5 1.0 1.5		
1.6	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand		Moist	8				
1.8	SAND, pale brown, well sorted, fine to medium grained sand			9		2.0		
	Terminated at 2 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541934
NORTHING (GDA94 Zone 55): 5256403

Point : PT23
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 5.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, dolerite		Moist	3		0.0 0.5 1.0		
1.5	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand			8		1.5		
	Terminated at 1.6 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541969
NORTHING (GDA94 Zone 55): 5256426

Point : PT24
DATE TESTED: 16/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Dry	3		0.0		
0.4	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand		Slightly Moist	8		0.5		
0.6	SAND, pale brown, well sorted, fine to medium grained sand		Dry	9		1.0		
	Terminated at 1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541845
NORTHING (GDA94 Zone 55): 5256483

Point : PT25
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand		Dry	7		0.0		
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541844
NORTHING (GDA94 Zone 55): 5256480

Point : PT26
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand		Dry	7		0.0		
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541851
NORTHING (GDA94 Zone 55): 5256479

Point : PT27
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand		Dry	7		0.0		
	Terminated at 0.1 m Depth							

GROUNDWATER: NA

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ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541850
NORTHING (GDA94 Zone 55): 5256474

Point : PT28
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 3.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand		Dry	7		0.0		PT28 0.0
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541858
NORTHING (GDA94 Zone 55): 5256471

Point : PT29
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 5.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand		Dry	7		0.0		
	Terminated at 0.3 m Depth							

GROUNDWATER: Not Encountered

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ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541852
NORTHING (GDA94 Zone 55): 5256471

Point : PT30
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand		Dry	7		0.0		
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541848
NORTHING (GDA94 Zone 55): 5256465

Point : PT31
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand		Dry	7		0.0		
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541837
NORTHING (GDA94 Zone 55): 5256470

Point : PT32
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 3.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand, dolerite, root fibres		Dry	3		0.0		
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541839
NORTHING (GDA94 Zone 55): 5256476

Point : PT33
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand		Dry	7		0.0		
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541833
NORTHING (GDA94 Zone 55): 5256481

Point : PT34
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand		Dry	7		0.0		PT34 0.1
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541828
NORTHING (GDA94 Zone 55): 5256473

Point : PT35
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 5.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace clay, dark greyish brown, well sorted, fine to medium grained sand, dolerite		Slightly Moist	6		0.0		
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541822
NORTHING (GDA94 Zone 55): 5256488

Point : PT36
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 5.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand		Dry	7		0.0		PT36 0.0
	Terminated at 0.3 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541801
NORTHING (GDA94 Zone 55): 5256479

Point : PT37
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace clay, dark greyish brown, well sorted, fine to medium grained sand, dolerite		Dry	6		0.0		
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541807
NORTHING (GDA94 Zone 55): 5256475

Point : PT38
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand		Dry	7		0.0		
	Terminated at 0.1 m Depth							

GROUNDWATER: NA

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541802
NORTHING (GDA94 Zone 55): 5256474

Point : PT39
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand, dolerite		Dry	7		0.0		
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541812
NORTHING (GDA94 Zone 55): 5256485

Point : PT40
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 5.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace clay, dark greyish brown, well sorted, fine to medium grained sand, dolerite		Dry	6		0.0		PT40 0.0
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541805
NORTHING (GDA94 Zone 55): 5256483

Point : PT41
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace clay, dark greyish brown, well sorted, fine to medium grained sand, dolerite		Dry	6		0.0		
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541809
NORTHING (GDA94 Zone 55): 5256480

Point : PT42
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 5.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace clay, dark greyish brown, well sorted, fine to medium grained sand, dolerite		Dry	6		0.0		PT42 0.0
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541808
NORTHING (GDA94 Zone 55): 5256483

Point : PT43
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 4.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace clay, dark greyish brown, well sorted, fine to medium grained sand, dolerite		Dry	6		0.0		
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541906
NORTHING (GDA94 Zone 55): 5256438

Point : PT44
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 6.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: AMS Powerprobe 9120 RAP
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand		Dry	3		0.0 0.5 1.0 1.5		PT44 1.5
1.7	FILL: SAND trace gravel, trace silt, light yellowish brown, poorly sorted, fine to medium grained sand			4		2.0 2.5		
2.6	TOPSOIL: SAND with silt, trace clay, dark grey, poorly sorted, fine to medium grained sand		Slightly Moist	8				PT44 2.6
2.8	SAND, pale brown, well sorted, fine to medium grained sand			9		3.0		
	Terminated at 3 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541843
NORTHING (GDA94 Zone 55): 5256358

Point : PT45
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 2.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand		Dry	7		0.0		PT45 0.0
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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enviro·tech CONSULTANTS

ASSESSMENT: Foundation Classification
STRUCTURE: Production Kitchen
EASTING (GDA94 Zone 55): 541831
NORTHING (GDA94 Zone 55): 5256358

Point : PT46
DATE TESTED: 22/01/2025
LOGGED BY: M. Scalisi
ELEVATION.: 2.00 m AHD

LOCATION: 1309 Tasman Highway - Cambridge
CLIENT: Hobart International Airport

EQUIPMENT: 50mm Christie Post Driver
RELATIVE TO NATURAL SURFACE (RL):

DEPTH (m)	DESCRIPTION	PIEZO	MOISTURE	LAYER	GRAPHIC	DEPTH (m)	PID (ppm)	Soil Sample
0	TOPSOIL: SAND trace silt/clay, dark greyish brown, poorly sorted, fine to medium grained sand		Dry	7		0.0		PT46 0.0
	Terminated at 0.1 m Depth							

GROUNDWATER: Not Encountered

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Appendix 4 Threshold Investigation and Screening Limits

Soil HILs – HIL D

Sample ID	Land Use	Arsenic	Cadmium	Copper	Lead	Nickel	Zinc	Mercury (inorganic)	Carcinogenic PAHs (as BaP TEQ)	Total PAHs	PFOA	PFHxS and PFOS
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PT01 2.0	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT10 0.5	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT10 1.5	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT12 0.3	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT12 0.7	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT13 1.0	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT16 1.0	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT20 0.5	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT20 2.5	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT28 0.0	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT34 0.1	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT36 0.0	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT40 0.0	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT42 0.0	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT44 1.5	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT44 2.6	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT45 0.0	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
PT46 0.0	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50
Duplicate	D	3000	900	240000	1500	6000	400000	730	40	4000	20	50

Land Use: Residential A; B: Residential B; C: Public Open Space; D: Commercial / Industrial

Soil HSL's – HSL D

Sample ID	Land Use	Grain Class	Depth Range (m)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	F1	F2
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PT10 0.5	D	S	0-1	3	NL	NL	230	NL	260	NL
PT10 1.5	D	S	1-2	3	NL	NL	NL	NL	370	NL
PT12 0.3	D	S	0-1	3	NL	NL	230	NL	260	NL
PT12 0.7	D	S	0-1	3	NL	NL	230	NL	260	NL
PT13 1.0	D	S	1-2	3	NL	NL	NL	NL	370	NL
PT16 1.0	D	S	1-2	3	NL	NL	NL	NL	370	NL
PT20 0.5	D	S	0-1	3	NL	NL	230	NL	260	NL
PT20 2.5	D	S	2-4	3	NL	NL	NL	NL	630	NL
PT28 0.0	D	S	0-1	3	NL	NL	230	NL	260	NL
PT34 0.1	D	S	0-1	3	NL	NL	230	NL	260	NL
PT36 0.0	D	S	0-1	3	NL	NL	230	NL	260	NL
PT40 0.0	D	S	0-1	3	NL	NL	230	NL	260	NL
PT42 0.0	D	S	0-1	3	NL	NL	230	NL	260	NL
PT44 1.5	D	S	1-2	3	NL	NL	NL	NL	370	NL
PT44 2.6	D	S	2-4	3	NL	NL	NL	NL	630	NL
PT45 0.0	D	S	0-1	3	NL	NL	230	NL	260	NL
Duplicate	D	S	0-1	3	NL	NL	230	NL	260	NL

Land Use: Residential A; B: Residential B; C: Public Open Space; D: Commercial / Industrial

Grain Class Soil Class: S (SAND / GRAVEL) Coarse-Grained Soil; M (SILT) Fine-grained soil - silts and clays (liquid limit <50%); C (CLAY) Fine-grained soil - silts and clays (liquid limit >50%)

Soil EIL's

Sample	Land Use	% Clay	pH	CEC	Zinc	Copper (CEC)	Copper (pH)	Chromium	Nickel	Lead	Arsenic	Naphthalene	PFOS - Indirect Exposure (HEPA 2025)	PFOA - Indirect Exposure (HEPA 2025)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PT01 2.0	C/I	5	5.3	10	420	280	190	530	55	1800	160	370	0.003	0.003
PT10 0.5	C/I	5	6.7	10	620	280	400	530	55	1800	160	370	0.003	0.003
PT10 1.5	C/I	5	5	10	290	280	147	530	55	1800	160	370	0.003	0.003
PT12 0.3	C/I	5	6.6	10	620	280	400	530	55	1800	160	370	0.003	0.003
PT12 0.7	C/I	5	5.6	10	420	280	190	530	55	1800	160	370	0.003	0.003
PT13 1.0	C/I	5	6.9	10	620	280	615	530	55	1800	160	370	0.003	0.003
PT16 1.0	C/I	5	5.4	10	420	280	190	530	55	1800	160	370	0.003	0.003
PT20 0.5	C/I	5	6.9	10	620	280	615	530	55	1800	160	370	0.003	0.003
PT20 2.5	C/I	5	5	10	290	280	147	530	55	1800	160	370	0.003	0.003
PT28 0.0	C/I	5	5.2	10	290	280	147	530	55	1800	160	370	0.003	0.003
PT34 0.1	C/I	5	6.6	10	620	280	400	530	55	1800	160	370	0.003	0.003
PT36 0.0	C/I	5	5.2	10	290	280	147	530	55	1800	160	370	0.003	0.003
PT40 0.0	C/I	5	5.4	10	420	280	190	530	55	1800	160	370	0.003	0.003
PT42 0.0	C/I	5	5.6	10	420	280	190	530	55	1800	160	370	0.003	0.003
PT44 1.5	C/I	5	6.2	10	620	280	280	530	55	1800	160	370	0.003	0.003
PT44 2.6	C/I	5	5.2	10	290	280	147	530	55	1800	160	370	0.003	0.003
PT45 0.0	C/I	5	5	10	290	280	147	530	55	1800	160	370	0.003	0.003
PT46 0.0	C/I	5	4.3	10	190	280	85	530	55	1800	160	370	0.003	0.003
Duplicate	C/I	5	5.6	10	420	280	190	530	55	1800	160	370	0.003	0.003

Land Use AES: Areas of Ecological Significance; UR/POS: Urban Residential / Public Open Space; C/I: Commercial and Industrial
pH Soil pH as tested by the laboratory using the method EA001: pH in soil using 0.01M CaCl extract
CEC Estimated from the soil type logged at the Site
Land Use AES: areas of ecological significance; UR/POS: urban residential/public open space; C/I: commercial/industrial land use

Soil ESL's

Sample	Land Use	Coarse /Fine	F1	F2	F3	F4	Benzene	Toluene	Ethylbenzene	Total Xylenes
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PT01 2.0	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT10 0.5	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT10 1.5	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT12 0.3	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT12 0.7	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT13 1.0	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT16 1.0	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT20 0.5	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT20 2.5	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT28 0.0	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT34 0.1	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT36 0.0	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT40 0.0	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT42 0.0	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT44 1.5	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT44 2.6	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT45 0.0	C/I	Coarse	215	215	1700	3300	75	135	165	180
PT46 0.0	C/I	Coarse	215	215	1700	3300	75	135	165	180
Duplicate	C/I	Coarse	215	215	1700	3300	75	135	165	180

Land Use AES: Areas of Ecological Significance; UR/POS: Urban Residential / Public Open Space; C/I: Commercial and Industrial
Coarse /Fine Coarse >50% SAND/GRAVEL; Fine >50% SILT/CLAY

Appendix 5 Chain of Custody & Sample Receipt Notification

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: EM2501174		
Client	: ENVIRO-TECH CONSULTANTS PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MR KRIS TAYLOR	Contact	: Katie Davis
Address	: 162 Macquarie Street HOBART 7000	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: kris@ENVIROTECHTAS.COM.AU	E-mail	: katie.davis@alsglobal.com
Telephone	: 03 6224 9197	Telephone	: +61-3-8549 9600
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: J0790 Lot 1 Grueber Avenue Cambridge	Page	: 1 of 3
Order number	: ----	Quote number	: EM2022ENVTAS0001 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: MARCO SCALISI		

Dates

Date Samples Received	: 24-Jan-2025 11:10	Issue Date	: 28-Jan-2025
Client Requested Due Date	: 03-Feb-2025	Scheduled Reporting Date	: **03-Feb-2025**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 15.2°C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 21 / 21

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Melbourne, NATA accreditation no. 825, site no. 13778.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

right solutions. right partner.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA001 pH (CaCl)	SOIL - EA055-103 Moisture Content	SOIL - EP231 (solids) PFAS - Short Suite (12 analytes)	SOIL - S-26 8 metals/TRH/BTEX/PAH
EM2501174-001	22-Jan-2025 00:00	PT01 2.0m	✓	✓	✓	✓
EM2501174-002	22-Jan-2025 00:00	PT10 0.5m	✓	✓	✓	✓
EM2501174-003	22-Jan-2025 00:00	PT10 1.5m	✓	✓	✓	✓
EM2501174-004	22-Jan-2025 00:00	PT12 0.3m	✓	✓	✓	✓
EM2501174-005	22-Jan-2025 00:00	PT12 0.7m	✓	✓	✓	✓
EM2501174-006	22-Jan-2025 00:00	PT13 1.0m	✓	✓	✓	✓
EM2501174-007	22-Jan-2025 00:00	PT16 1.0m	✓	✓	✓	✓
EM2501174-008	22-Jan-2025 00:00	PT20 0.5m	✓	✓	✓	✓
EM2501174-009	22-Jan-2025 00:00	PT20 2.5m	✓	✓	✓	✓
EM2501174-010	22-Jan-2025 00:00	PT28 0.0m	✓	✓	✓	✓
EM2501174-011	22-Jan-2025 00:00	PT34 0.1m	✓	✓	✓	✓
EM2501174-012	22-Jan-2025 00:00	PT36 0.0m	✓	✓	✓	✓
EM2501174-013	22-Jan-2025 00:00	PT40 0.0m	✓	✓	✓	✓
EM2501174-014	22-Jan-2025 00:00	PT42 0.0m	✓	✓	✓	✓
EM2501174-015	22-Jan-2025 00:00	PT44 1.5m	✓	✓	✓	✓
EM2501174-016	22-Jan-2025 00:00	PT44 2.6m	✓	✓	✓	✓
EM2501174-017	22-Jan-2025 00:00	PT45 0.0m	✓	✓	✓	✓
EM2501174-018	22-Jan-2025 00:00	PT46 0.0m	✓	✓	✓	✓
EM2501174-019	22-Jan-2025 00:00	Duplicate	✓	✓	✓	✓

Matrix: **WATER**

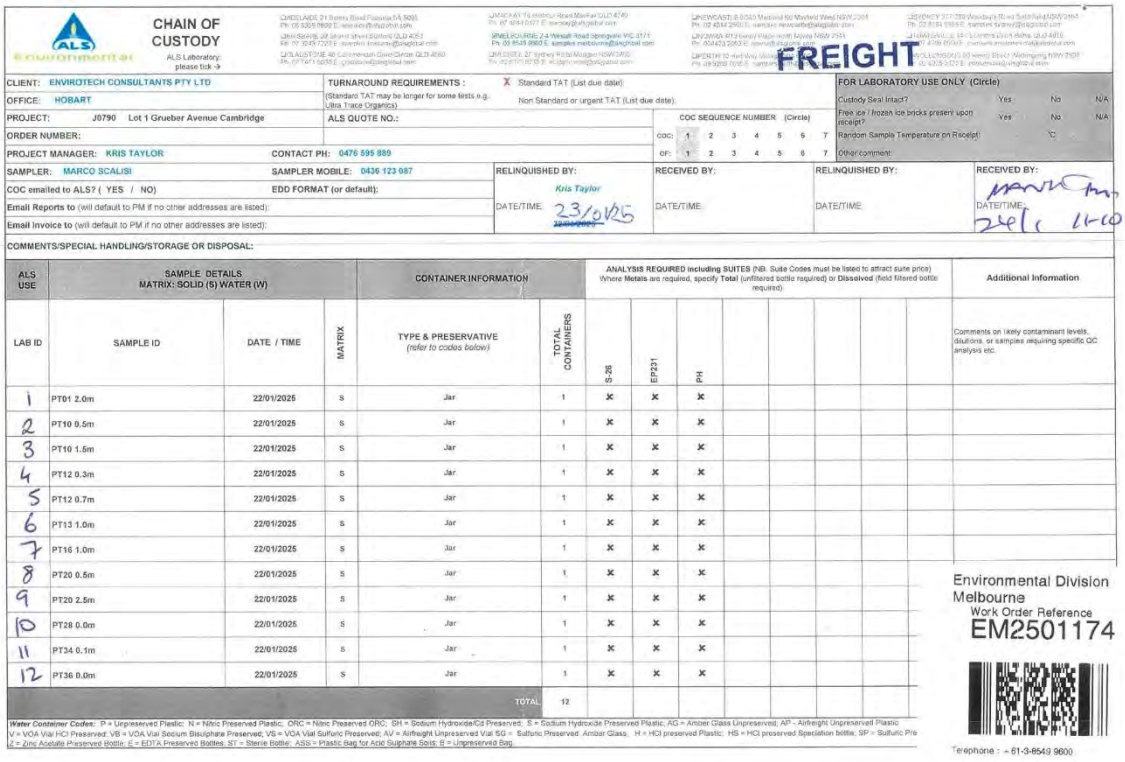
Laboratory sample ID	Sampling date / time	Sample ID	WATER - W-26T TRH/BTEX/NPAH/Total 8 Metals
EM2501174-020	22-Jan-2025 00:00	Rinse Blank	✓
EM2501174-021	22-Jan-2025 00:00	Field Blank	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ALL INVOICES		
- A4 - AU Tax Invoice (INV)	Email	admin@envirotechtas.com.au
ALL RESULTS		
- *AU Certificate of Analysis - NATA (COA)	Email	OFFICE@ENVIROTECHTAS.COM.AU
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	OFFICE@ENVIROTECHTAS.COM.AU
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	OFFICE@ENVIROTECHTAS.COM.AU
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	OFFICE@ENVIROTECHTAS.COM.AU
- Chain of Custody (CoC) (COC)	Email	OFFICE@ENVIROTECHTAS.COM.AU
- EDI Format - ENMRG (ENMRG)	Email	OFFICE@ENVIROTECHTAS.COM.AU
KRIS TAYLOR		
- *AU Certificate of Analysis - NATA (COA)	Email	kris@ENVIROTECHTAS.COM.AU
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	kris@ENVIROTECHTAS.COM.AU
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	kris@ENVIROTECHTAS.COM.AU
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	kris@ENVIROTECHTAS.COM.AU
- A4 - AU Tax Invoice (INV)	Email	kris@ENVIROTECHTAS.COM.AU
- Chain of Custody (CoC) (COC)	Email	kris@ENVIROTECHTAS.COM.AU
- EDI Format - ENMRG (ENMRG)	Email	kris@ENVIROTECHTAS.COM.AU
MARCO		
- *AU Certificate of Analysis - NATA (COA)	Email	marco@envirotechtas.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	marco@envirotechtas.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	marco@envirotechtas.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	marco@envirotechtas.com.au
- Chain of Custody (CoC) (COC)	Email	marco@envirotechtas.com.au
- EDI Format - ENMRG (ENMRG)	Email	marco@envirotechtas.com.au



CHAIN OF CUSTODY

ALS Laboratory: please tick →

FREIGHT

CLIENT: ENVIROTECH CONSULTANTS PTY LTD	TURNAROUND REQUIREMENTS: X Standard TAT (List due date)	FOR LABORATORY USE ONLY (Circle)	
OFFICE: HOBART	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes No N/A
PROJECT: J0790 Lot 1 Grueber Avenue Cambridge	ALS QUOTE NO.:	Free ice / frozen ice bricks present upon receipt?	Yes No N/A
ORDER NUMBER:	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: KRIS TAYLOR CONTACT PH: 0476 595 889		Other comment:	
SAMPLER: MARCO SCALISI SAMPLER MOBILE: 0436 123 087	RELINQUISHED BY: Kris Taylor DATE/TIME: 23/01/25	RECEIVED BY: DATE/TIME:	RELINQUISHED BY: DATE/TIME:
COC emailed to ALS? (YES / NO) EDD FORMAT (default):			RECEIVED BY: DATE/TIME: 24/1 11:10
Email Reports to (will default to PM if no other addresses are listed):			
Email Invoice to (will default to PM if no other addresses are listed):			

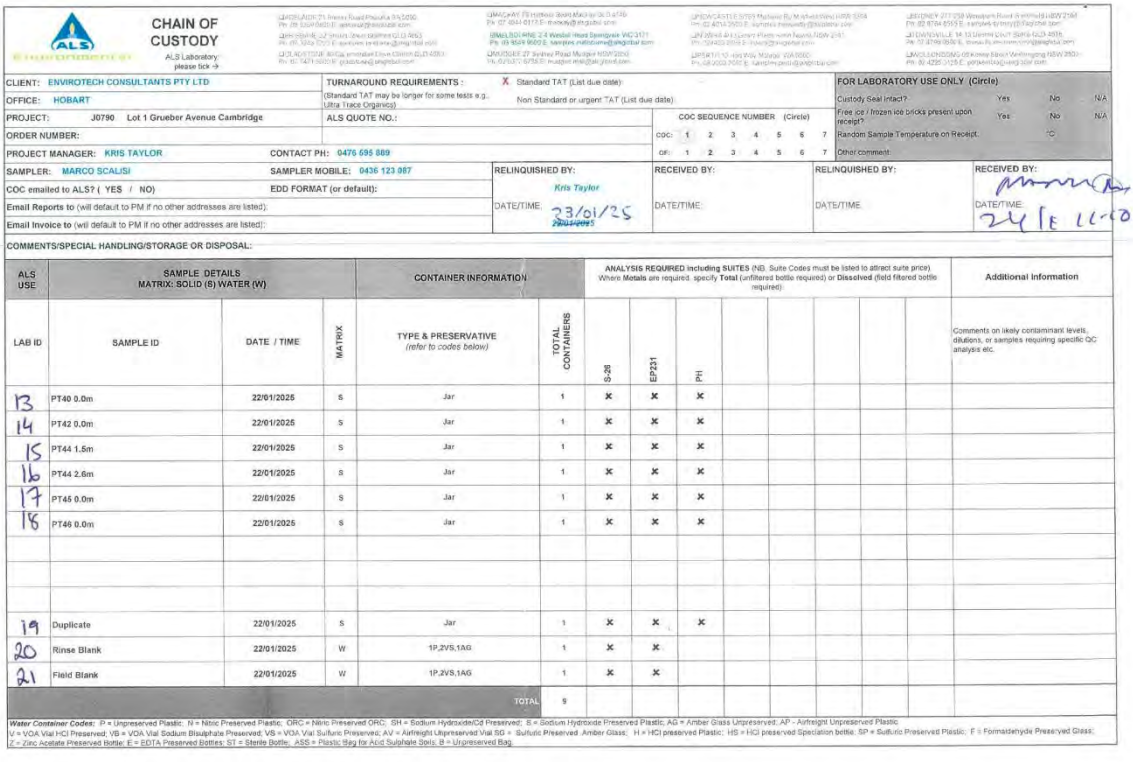
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required):								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	S-26	EP231	PH						
1	PT01 2.0m	22/01/2025	S	Jar	1	X	X	X						
2	PT10 0.5m	22/01/2025	S	Jar	1	X	X	X						
3	PT10 1.5m	22/01/2025	S	Jar	1	X	X	X						
4	PT12 0.3m	22/01/2025	S	Jar	1	X	X	X						
5	PT12 0.7m	22/01/2025	S	Jar	1	X	X	X						
6	PT13 1.0m	22/01/2025	S	Jar	1	X	X	X						
7	PT16 1.0m	22/01/2025	S	Jar	1	X	X	X						
8	PT20 0.5m	22/01/2025	S	Jar	1	X	X	X						
9	PT20 2.5m	22/01/2025	S	Jar	1	X	X	X						
10	PT28 0.0m	22/01/2025	S	Jar	1	X	X	X						
11	PT34 0.1m	22/01/2025	S	Jar	1	X	X	X						
12	PT36 0.0m	22/01/2025	S	Jar	1	X	X	X						
				TOTAL	12									

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Pre Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Environmental Division
Melbourne
Work Order Reference
EM2501174

Telephone : +61-3-8549 9600



CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT: ENVIROTECH CONSULTANTS PTY LTD	TURNAROUND REQUIREMENTS: X Standard TAT (List due date)	FOR LABORATORY USE ONLY (Circle)	
OFFICE: HOBART	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes No N/A
PROJECT: J0790 Lot 1 Grueber Avenue Cambridge	ALS QUOTE NO.:	Free ice / frozen ice bricks present upon receipt?	Yes No N/A
ORDER NUMBER:	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: KRIS TAYLOR CONTACT PH: 0476 595 889		Other comment:	
SAMPLER: MARCO SCALISI SAMPLER MOBILE: 0436 123 087	RELINQUISHED BY: Kris Taylor DATE/TIME: 23/01/25	RECEIVED BY: DATE/TIME:	RELINQUISHED BY: DATE/TIME:
COC emailed to ALS? (YES / NO) EDD FORMAT (or default):			RECEIVED BY: DATE/TIME: 24/1 11:10
Email Reports to (will default to PM if no other addresses are listed):			
Email Invoice to (will default to PM if no other addresses are listed):			

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required):								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	S-26	EP231	PH						
13	PT40 0.0m	22/01/2025	S	Jar	1	X	X	X						
14	PT42 0.0m	22/01/2025	S	Jar	1	X	X	X						
15	PT44 1.5m	22/01/2025	S	Jar	1	X	X	X						
16	PT44 2.6m	22/01/2025	S	Jar	1	X	X	X						
17	PT45 0.0m	22/01/2025	S	Jar	1	X	X	X						
18	PT46 0.0m	22/01/2025	S	Jar	1	X	X	X						
19	Duplicate	22/01/2025	S	Jar	1	X	X	X						
20	Rinse Blank	22/01/2025	W	1P,2VS,1AG	1	X	X							
21	Field Blank	22/01/2025	W	1P,2VS,1AG	1	X	X							
				TOTAL	9									

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM2502406**		
Client	: **ENVIRO-TECH CONSULTANTS PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MR KRIS TAYLOR	Contact	: Katie Davis
Address	: 162 Macquarie Street HOBART 7000	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: kris@ENVIROTECHTAS.COM.AU	E-mail	: katie.davis@alsglobal.com
Telephone	: 03 6224 9197	Telephone	: +61-3-8549 9600
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: J0790 Lot 1 Grueber Avenue Cambridge	Page	: 1 of 2
Order number	: ----	Quote number	: EM2022ENVTAS0001 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: MARCO SCALISI		

Dates

Date Samples Received	: 14-Feb-2025 11:15	Issue Date	: 15-Feb-2025
Client Requested Due Date	: 21-Feb-2025	Scheduled Reporting Date	: **21-Feb-2025**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 17.6°C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 3 / 3

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Melbourne, NATA accreditation no. 825, site no. 13778.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit

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Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA200 Asbestos Identification in Soils -
EM2502406-001	22-Jan-2025 00:00	PT07 0.0m	✓
EM2502406-002	22-Jan-2025 00:00	PT19 0.0m	✓
EM2502406-003	22-Jan-2025 00:00	PT32 0.0m	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ALL INVOICES

- A4 - AU Tax Invoice (INV)	Email	admin@envirotechtas.com.au

KRIS TAYLOR

- *AU Certificate of Analysis - NATA (COA)	Email	kris@ENVIROTECHTAS.COM.AU
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	kris@ENVIROTECHTAS.COM.AU
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	kris@ENVIROTECHTAS.COM.AU
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	kris@ENVIROTECHTAS.COM.AU
- A4 - AU Tax Invoice (INV)	Email	kris@ENVIROTECHTAS.COM.AU
- Chain of Custody (CoC) (COC)	Email	kris@ENVIROTECHTAS.COM.AU
- EDI Format - ENMRG (ENMRG)	Email	kris@ENVIROTECHTAS.COM.AU

FREIGHT

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT: ENVIROTECH CONSULTANTS PTY LTD	TURNAROUND REQUIREMENTS : X Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE: HOBART	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No
PROJECT: J0790 Lot 1 Grueber Avenue Cambridge	ALS QUOTE NO.:	Free ice / frozen ice bricks present upon receipt? Yes No
ORDER NUMBER:	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: KRIS TAYLOR CONTACT PH: 0476 595 889	OF: 1 2 3 4 5 6 7	Other comment:
SAMPLER: MARCO SCALISI SAMPLER MOBILE: 0436 123 087	RELINQUISHED BY: Kris Taylor	RECEIVED BY:
COC emailed to ALS? (YES / NO) EDD FORMAT (or default):	DATE/TIME: 13/02/2025	DATE/TIME:
Email Reports to (will default to PM if no other addresses are listed):	RELINQUISHED BY:	RECEIVED BY:
Email Invoice to (will default to PM if no other addresses are listed):	DATE/TIME:	DATE/TIME: 14/2 11

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	EA200								
1	PT07 0.0m	22/01/2025	S	Bag	1	X								Comments on likely contaminant level dilutions, or samples requiring specific
2	PT19 0.0m	22/01/2025	S	Bag	1	X								
3	PT32 0.0m	22/01/2025	S	Bag	1	X								
				TOTAL	3									

Environmental Division
Melbourne
Work Order Reference
EM2502406

Telephone : +61-3-8549 9600

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag

Appendix 6 Laboratory Certificate of Analysis

CERTIFICATE OF ANALYSIS

Work Order	: EM2501174	Page	: 1 of 22
Client	: ENVIRO-TECH CONSULTANTS PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MR KRIS TAYLOR	Contact	: Katie Davis
Address	: 162 Macquarie Street HOBART 7000	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: 03 6224 9197	Telephone	: +61-3-8549 9600
Project	: J0790 Lot 1 Grueber Avenue Cambridge	Date Samples Received	: 24-Jan-2025 11:10
Order number	: ----	Date Analysis Commenced	: 29-Jan-2025
C-O-C number	: ----	Issue Date	: 04-Feb-2025 09:17
Sampler	: MARCO SCALISI		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 21		
No. of samples analysed	: 21		

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*
Andrew Lu	VOC Section Supervisor	Melbourne Organics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Inorganics, 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 Contract 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.
- 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.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- 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.
- EG005T: EM2501200 #14, Poor duplicate precision for copper due to sample heterogeneity. Confirmed by re-extraction and re-analysis. The following results were observed: 460 mg/kg, 294 mg/kg, 166 mg/kg and 122 mg/kg.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per USEPA 1633 limits where LISTED. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PT01 2.0m	PT10 0.5m	PT10 1.5m	PT12 0.3m	PT12 0.7m
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00
Compound	CAS Number	LOR	Unit		EM2501174-001	EM2501174-002	EM2501174-003	EM2501174-004	EM2501174-005
					Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit		5.3	6.7	5.0	6.6	5.6
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		5.3	2.8	2.0	1.6	2.0
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		3	8	3	7	4
Copper	7440-50-8	5	mg/kg		<5	<5	6	<5	<5
Lead	7439-92-1	5	mg/kg		<5	<5	<5	<5	<5
Nickel	7440-02-0	2	mg/kg		<2	12	<2	13	4
Zinc	7440-66-6	5	mg/kg		<5	10	7	6	6
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PT01 2.0m	PT10 0.5m	PT10 1.5m	PT12 0.3m	PT12 0.7m
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00
Compound	CAS Number	LOR	Unit		EM2501174-001	EM2501174-002	EM2501174-003	EM2501174-004	EM2501174-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PT01 2.0m	PT10 0.5m	PT10 1.5m	PT12 0.3m	PT12 0.7m
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00
Compound	CAS Number	LOR	Unit		EM2501174-001	EM2501174-002	EM2501174-003	EM2501174-004	EM2501174-005
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	---	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	---	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		0.0008	0.0004	0.0004	<0.0002	0.0005
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		0.0020	0.0014	0.0008	<0.0002	0.0009
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		0.0003	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		0.0028	0.0018	0.0012	<0.0002	0.0014
Sum of PFAS (WA DER List)	---	0.0002	mg/kg		0.0031	0.0018	0.0012	<0.0002	0.0014
EP075(SIM)S: Phenolic Compound Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PT01 2.0m	PT10 0.5m	PT10 1.5m	PT12 0.3m	PT12 0.7m
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00
Compound	CAS Number	LOR	Unit		EM2501174-001	EM2501174-002	EM2501174-003	EM2501174-004	EM2501174-005
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
Phenol-d6	13127-88-3	0.5	%		77.8	83.6	78.6	82.4	82.0
2-Chlorophenol-D4	93951-73-6	0.5	%		91.4	97.5	90.9	95.0	93.6
2.4.6-Tribromophenol	118-79-6	0.5	%		64.6	80.0	75.6	78.7	80.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		85.2	88.6	93.0	84.6	98.1
Anthracene-d10	1719-06-8	0.5	%		104	115	103	106	108
4-Terphenyl-d14	1718-51-0	0.5	%		100	108	98.2	104	105
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		74.2	94.7	86.2	92.2	86.2
Toluene-D8	2037-26-5	0.2	%		72.8	83.7	84.1	82.7	84.2
4-Bromofluorobenzene	460-00-4	0.2	%		86.1	98.9	96.0	96.4	96.4
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.0002	%		99.9	109	108	112	105
13C8-PFOA	---	0.0002	%		112	119	115	116	119

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PT13 1.0m	PT16 1.0m	PT20 0.5m	PT20 2.5m	PT28 0.0m
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00
Compound	CAS Number	LOR	Unit		EM2501174-006	EM2501174-007	EM2501174-008	EM2501174-009	EM2501174-010
					Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit		6.9	5.4	6.9	5.0	5.2
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		9.5	5.7	3.6	2.4	1.0
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		3	3	4	4	3
Copper	7440-50-8	5	mg/kg		<5	<5	<5	<5	7
Lead	7439-92-1	5	mg/kg		<5	<5	<5	<5	<5
Nickel	7440-02-0	2	mg/kg		<2	<2	<2	<2	<2
Zinc	7440-66-6	5	mg/kg		6	9	<5	<5	10
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PT13 1.0m	PT16 1.0m	PT20 0.5m	PT20 2.5m	PT28 0.0m
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00
Compound	CAS Number	LOR	Unit		EM2501174-006	EM2501174-007	EM2501174-008	EM2501174-009	EM2501174-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PT13 1.0m	PT16 1.0m	PT20 0.5m	PT20 2.5m	PT28 0.0m
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00
Compound	CAS Number	LOR	Unit		EM2501174-006	EM2501174-007	EM2501174-008	EM2501174-009	EM2501174-010
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	---	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	---	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		0.0057	0.0007	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		0.0011	0.0016	0.0077	0.0006	0.0011
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	0.0003	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		0.0003	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		0.0068	0.0023	0.0077	0.0006	0.0011
Sum of PFAS (WA DER List)	---	0.0002	mg/kg		0.0071	0.0026	0.0077	0.0006	0.0011
EP075(SIM)S: Phenolic Compound Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PT13 1.0m	PT16 1.0m	PT20 0.5m	PT20 2.5m	PT28 0.0m
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00
Compound	CAS Number	LOR	Unit		EM2501174-006	EM2501174-007	EM2501174-008	EM2501174-009	EM2501174-010
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
Phenol-d6	13127-88-3	0.5	%		88.9	72.6	77.7	79.8	80.3
2-Chlorophenol-D4	93951-73-6	0.5	%		103	85.2	90.4	91.7	92.5
2.4.6-Tribromophenol	118-79-6	0.5	%		89.1	75.3	76.3	75.8	84.9
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		105	88.0	81.8	96.7	98.5
Anthracene-d10	1719-06-8	0.5	%		119	98.8	104	108	110
4-Terphenyl-d14	1718-51-0	0.5	%		114	94.9	101	98.7	104
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		82.5	82.1	82.0	95.2	84.3
Toluene-D8	2037-26-5	0.2	%		84.7	81.3	81.9	88.1	84.1
4-Bromofluorobenzene	460-00-4	0.2	%		97.8	93.3	95.3	101	98.0
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.0002	%		104	105	105	108	111
13C8-PFOA	---	0.0002	%		112	123	116	105	107

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PT34 0.1m	PT36 0.0m	PT40 0.0m	PT42 0.0m	PT44 1.5m
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00
Compound	CAS Number	LOR	Unit		EM2501174-011	EM2501174-012	EM2501174-013	EM2501174-014	EM2501174-015
					Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	---	0.1	pH Unit		6.6	5.2	5.4	5.6	6.2
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	---	1.0	%		<1.0	<1.0	<1.0	1.0	1.1
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		5	4	4	4	4
Copper	7440-50-8	5	mg/kg		<5	7	<5	<5	<5
Lead	7439-92-1	5	mg/kg		<5	6	<5	<5	<5
Nickel	7440-02-0	2	mg/kg		<2	<2	2	<2	<2
Zinc	7440-66-6	5	mg/kg		8	18	10	9	<5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PT34 0.1m	PT36 0.0m	PT40 0.0m	PT42 0.0m	PT44 1.5m
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00
Compound	CAS Number	LOR	Unit		EM2501174-011	EM2501174-012	EM2501174-013	EM2501174-014	EM2501174-015
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	---	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	---	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	---	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	---	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	---	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	---	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	---	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	---	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	---	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	---	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	---	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	---	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	---	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PT34 0.1m	PT36 0.0m	PT40 0.0m	PT42 0.0m	PT44 1.5m
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00
Compound	CAS Number	LOR	Unit		EM2501174-011	EM2501174-012	EM2501174-013	EM2501174-014	EM2501174-015
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	---	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	---	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		0.0004	0.0008	0.0030	0.0012	0.0194
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		0.0004	0.0008	0.0030	0.0012	0.0194
Sum of PFAS (WA DER List)	---	0.0002	mg/kg		0.0004	0.0008	0.0030	0.0012	0.0194
EP075(SIM)S: Phenolic Compound Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PT34 0.1m	PT36 0.0m	PT40 0.0m	PT42 0.0m	PT44 1.5m
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00
Compound	CAS Number	LOR	Unit		EM2501174-011	EM2501174-012	EM2501174-013	EM2501174-014	EM2501174-015
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
Phenol-d6	13127-88-3	0.5	%		81.1	98.4	87.1	81.8	79.2
2-Chlorophenol-D4	93951-73-6	0.5	%		93.8	114	102	93.7	91.0
2.4.6-Tribromophenol	118-79-6	0.5	%		78.1	106	91.6	81.1	73.7
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		88.8	122	107	98.1	85.3
Anthracene-d10	1719-06-8	0.5	%		110	120	119	109	109
4-Terphenyl-d14	1718-51-0	0.5	%		103	129	110	101	102
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		88.3	92.9	87.6	95.6	89.9
Toluene-D8	2037-26-5	0.2	%		79.7	84.4	79.4	85.5	86.4
4-Bromofluorobenzene	460-00-4	0.2	%		94.7	98.3	91.8	99.2	101
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.0002	%		106	110	106	110	108
13C8-PFOA	---	0.0002	%		100	105	99.0	103	102

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	PT44 2.6m	PT45 0.0m	PT46 0.0m	Duplicate	----
			Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	----
Compound	CAS Number	LOR	Unit	EM2501174-016	EM2501174-017	EM2501174-018	EM2501174-019	----
				Result	Result	Result	Result	----
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	5.2	5.0	4.3	5.6	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	9.4	1.4	<1.0	1.1	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg	3	3	3	4	----
Copper	7440-50-8	5	mg/kg	<5	<5	<5	<5	----
Lead	7439-92-1	5	mg/kg	<5	<5	<5	<5	----
Nickel	7440-02-0	2	mg/kg	<2	<2	<2	<2	----
Zinc	7440-66-6	5	mg/kg	5	8	9	8	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	PT44 2.6m	PT45 0.0m	PT46 0.0m	Duplicate	----
			Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	----
Compound	CAS Number	LOR	Unit	EM2501174-016	EM2501174-017	EM2501174-018	EM2501174-019	----
				Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PT44 2.6m	PT45 0.0m	PT46 0.0m	Duplicate	---
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	---
Compound	CAS Number	LOR	Unit		EM2501174-016	EM2501174-017	EM2501174-018	EM2501174-019	------
					Result	Result	Result	Result	---
EP080: BTEXN - Continued									
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	---
^ Sum of BTEX	---	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	---
^ Total Xylenes	---	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	---
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	---
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	---
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		0.0002	<0.0002	<0.0002	<0.0002	---
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		0.0010	0.0005	0.0006	0.0014	---
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	---
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	---
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	---
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	---
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	---
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	---
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	---
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	---
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	---
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		0.0012	0.0005	0.0006	0.0014	---
Sum of PFAS (WA DER List)	---	0.0002	mg/kg		0.0012	0.0005	0.0006	0.0014	---
EP075(SIM)S: Phenolic Compound Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PT44 2.6m	PT45 0.0m	PT46 0.0m	Duplicate	---
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	---
Compound	CAS Number	LOR	Unit		EM2501174-016	EM2501174-017	EM2501174-018	EM2501174-019	------
					Result	Result	Result	Result	---
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
Phenol-d6	13127-88-3	0.5	%		83.7	78.7	78.7	83.5	---
2-Chlorophenol-D4	93951-73-6	0.5	%		99.8	90.9	91.3	95.0	---
2.4.6-Tribromophenol	118-79-6	0.5	%		86.2	78.3	79.6	87.4	---
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		105	84.3	93.2	97.3	---
Anthracene-d10	1719-06-8	0.5	%		126	108	105	114	---
4-Terphenyl-d14	1718-51-0	0.5	%		113	98.6	99.4	105	---
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		86.3	82.3	91.8	89.2	---
Toluene-D8	2037-26-5	0.2	%		83.4	82.2	85.0	82.8	---
4-Bromofluorobenzene	460-00-4	0.2	%		95.1	99.3	99.1	94.6	---
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.0002	%		110	111	113	112	---
13C8-PFOA	---	0.0002	%		105	105	97.3	104	---

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinse Blank	Field Blank	----	----	----
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM2501174-020	EM2501174-021	----	----	----
					Result	Result	---	---	---
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	---	---	---
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	---	---	---
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	---	---	---
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	---	---	---
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	---	---	---
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	---	---	---
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	---	---	---
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	---	---	---
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	---	---	---
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	---	---	---
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	---	---	---
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	---	---	---
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	---	---	---
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	---	---	---
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	---	---	---
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	---	---	---
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	---	---	---
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	---	---	---
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	---	---	---
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	---	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	---	---	---
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	---	---	---
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	---	---	---
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	---	---	---

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinse Blank	Field Blank	----	----	----
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM2501174-020	EM2501174-021	----	----	----
					Result	Result	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	---	---	---
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	---	---	---
C10 - C14 Fraction	----	50	µg/L		<50	<50	---	---	---
C15 - C28 Fraction	----	100	µg/L		<100	<100	---	---	---
C29 - C36 Fraction	----	50	µg/L		<50	<50	---	---	---
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	---	---	---
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	---	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	---	---	---
>C10 - C16 Fraction	----	100	µg/L		<100	<100	---	---	---
>C16 - C34 Fraction	----	100	µg/L		<100	<100	---	---	---
>C34 - C40 Fraction	----	100	µg/L		<100	<100	---	---	---
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	---	---	---
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	---	---	---
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	---	---	---
Toluene	108-88-3	2	µg/L		<2	<2	---	---	---
Ethylbenzene	100-41-4	2	µg/L		<2	<2	---	---	---
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	---	---	---
ortho-Xylene	95-47-6	2	µg/L		<2	<2	---	---	---
^ Total Xylenes	----	2	µg/L		<2	<2	---	---	---
^ Sum of BTEX	----	1	µg/L		<1	<1	---	---	---
Naphthalene	91-20-3	5	µg/L		<5	<5	---	---	---
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		38.1	33.8	---	---	---

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinse Blank	Field Blank	---	---	---
				Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	---	---	---
Compound	CAS Number	LOR	Unit		EM2501174-020	EM2501174-021	---	---	---
					Result	Result	---	---	---
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2-Chlorophenol-D4	93951-73-6	1.0	%		77.4	71.1	---	---	---
2.4.6-Tribromophenol	118-79-6	1.0	%		107	99.6	---	---	---
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		99.9	92.9	---	---	---
Anthracene-d10	1719-06-8	1.0	%		98.6	91.3	---	---	---
4-Terphenyl-d14	1718-51-0	1.0	%		95.9	89.5	---	---	---
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		97.2	97.2	---	---	---
Toluene-D8	2037-26-5	2	%		98.5	98.7	---	---	---
4-Bromofluorobenzene	460-00-4	2	%		111	112	---	---	---

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	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
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	---	68	136
13C8-PFOA	---	69	133

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	28	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
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

CERTIFICATE OF ANALYSIS

Work Order	: EM2502406	Page	: 1 of 3
Client	: ENVIRO-TECH CONSULTANTS PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MR KRIS TAYLOR	Contact	: Katie Davis
Address	: 162 Macquarie Street HOBART 7000	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: 03 6224 9197	Telephone	: +61-3-8549 9600
Project	: J0790 Lot 1 Grueber Avenue Cambridge	Date Samples Received	: 14-Feb-2025 11:15
Order number	: ----	Date Analysis Commenced	: 17-Feb-2025
C-O-C number	: ----	Issue Date	: 20-Feb-2025 08:22
Sampler	: MARCO SCALISI		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 3		
No. of samples analysed	: 3		

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
- Descriptive Results

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*
MINNIE TRAN	Approved Asbestos Identifier	Melbourne Asbestos, 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 Contract 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.

- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres.
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	PT07 0.0m	PT19 0.0m	PT32 0.0m	----	----
			Sampling date / time	22-Jan-2025 00:00	22-Jan-2025 00:00	22-Jan-2025 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2502406-001	EM2502406-002	EM2502406-003	----	----
				Result	Result	Result	---	---
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	Yes	Yes	Yes	---	---
Asbestos (Trace)	1332-21-4	-	-	No	No	No	---	---
Asbestos Type	1332-21-4	-	--	Ch + Cr	Ch	Ch	---	---
Synthetic Mineral Fibre	----	-	--	No	No	No	---	---
Organic Fibre	----	-	--	Yes	Yes	Yes	---	---
Sample weight (dry)	----	0.01	g	233	233	592	---	---
APPROVED IDENTIFIER:	----	-	--	M. TRAN	M. TRAN	M. TRAN	---	---

Analytical Results

Descriptive Results

Sub-Matrix: SOIL

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	PT07 0.0m - 22-Jan-2025 00:00	Brown sandy soil with organic matter plus multiple asbestos containing material fragments approx 35 x 25 x 3mm.
EA200: Description	PT19 0.0m - 22-Jan-2025 00:00	Brown sandy soil with organic matter plus one asbestos containing material fragment approx 20 x 15 x 3mm and one asbestos fibre bundle approx 0.5 x 0.5 x 0.5mm.
EA200: Description	PT32 0.0m - 22-Jan-2025 00:00	Brown sandy soil with organic matter plus one asbestos containing material fragment approx 15 x 10 x 3mm.

Appendix 7 Laboratory Quality Control

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2501174	Page	: 1 of 12
Client	: ENVIRO-TECH CONSULTANTS PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MR KRIS TAYLOR	Telephone	: +61-3-8549 9600
Project	: J0790 Lot 1 Grueber Avenue Cambridge	Date Samples Received	: 24-Jan-2025
Site	: ----	Issue Date	: 04-Feb-2025
Sampler	: MARCO SCALISI	No. of samples received	: 21
Order number	: ----	No. of samples analysed	: 21

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 Laboratory Control outliers occur.
- Duplicate outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- NO Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: SOIL

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005(ED093)T: Total Metals by ICP-AES	EM2501200--014	Anonymous	Copper	7440-50-8	116 %	0% - 20%	RPD exceeds LOR based limits

Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG020T: Total Metals by ICP-MS	EM2501054--011	Anonymous	Copper	7440-50-8	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EG020T: Total Metals by ICP-MS	EM2501054--011	Anonymous	Zinc	7440-66-6	Not Authorised	74.0-120%	MS recovery not determined, background level greater than or equal to 4x spike level.

Outliers : Frequency of Quality Control Samples

Matrix: WATER

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
TRH - Semivolatile Fraction	EP071	1	12	8.33	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	8	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

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Due for extraction	Evaluation	Analysis: Date analysed	Due for analysis	Evaluation
EA001: pH in soil using 0.01M CaCl extract							
Soil Glass Jar - Unpreserved (EA001)							
PT01 2.0m, PT10 1.5m, PT12 0.7m, PT16 1.0m, PT20 2.5m, PT34 0.1m, PT40 0.0m, PT44 1.5m, PT45 0.0m, Duplicate	22-Jan-2025	29-Jan-2025	29-Jan-2025	✓	29-Jan-2025	29-Jan-2025	✓
PT10 0.5m, PT12 0.3m, PT13 1.0m, PT20 0.5m, PT28 0.0m, PT36 0.0m, PT42 0.0m, PT44 2.6m, PT46 0.0m,							
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
PT01 2.0m, PT10 1.5m, PT12 0.7m, PT16 1.0m, PT20 2.5m, PT34 0.1m, PT40 0.0m, PT44 1.5m, PT45 0.0m, Duplicate	22-Jan-2025	—	—	—	30-Jan-2025	05-Feb-2025	✓
PT10 0.5m, PT12 0.3m, PT13 1.0m, PT20 0.5m, PT28 0.0m, PT36 0.0m, PT42 0.0m, PT44 2.6m, PT46 0.0m,							
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
PT01 2.0m, PT10 1.5m, PT12 0.7m, PT16 1.0m, PT20 2.5m, PT34 0.1m, PT40 0.0m, PT44 1.5m, PT45 0.0m, Duplicate	22-Jan-2025	30-Jan-2025	21-Jul-2025	✓	30-Jan-2025	21-Jul-2025	✓
PT10 0.5m, PT12 0.3m, PT13 1.0m, PT20 0.5m, PT28 0.0m, PT36 0.0m, PT42 0.0m, PT44 2.6m, PT46 0.0m,							

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Due for extraction	Evaluation	Analysis: Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
PT01 2.0m, PT10 1.5m, PT12 0.7m, PT16 1.0m, PT20 2.5m, PT34 0.1m, PT40 0.0m, PT44 1.5m, PT45 0.0m, Duplicate	22-Jan-2025	30-Jan-2025	19-Feb-2025	✓	30-Jan-2025	19-Feb-2025	✓
PT10 0.5m, PT12 0.3m, PT13 1.0m, PT20 0.5m, PT28 0.0m, PT36 0.0m, PT42 0.0m, PT44 2.6m, PT46 0.0m,							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
PT01 2.0m, PT10 1.5m, PT12 0.7m, PT16 1.0m, PT20 2.5m, PT34 0.1m, PT40 0.0m, PT44 1.5m, PT45 0.0m, Duplicate	22-Jan-2025	30-Jan-2025	05-Feb-2025	✓	31-Jan-2025	11-Mar-2025	✓
PT10 0.5m, PT12 0.3m, PT13 1.0m, PT20 0.5m, PT28 0.0m, PT36 0.0m, PT42 0.0m, PT44 2.6m, PT46 0.0m,							

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation: Date extracted	Due for extraction	Evaluation	Analysis: Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080)								
PT01 2.0m,	PT10 0.5m,	22-Jan-2025	29-Jan-2025	05-Feb-2025	✓	30-Jan-2025	05-Feb-2025	✓
PT10 1.5m,	PT12 0.3m,							
PT12 0.7m,	PT13 1.0m,							
PT16 1.0m,	PT20 0.5m,							
PT20 2.5m,	PT28 0.0m,							
PT34 0.1m,	PT36 0.0m,							
PT40 0.0m,	PT42 0.0m,							
PT44 1.5m,	PT44 2.6m,							
PT45 0.0m,	PT46 0.0m,							
Duplicate								
Soil Glass Jar - Unpreserved (EP071)								
PT01 2.0m,	PT10 0.5m,	22-Jan-2025	30-Jan-2025	05-Feb-2025	✓	31-Jan-2025	11-Mar-2025	✓
PT10 1.5m,	PT12 0.3m,							
PT12 0.7m,	PT13 1.0m,							
PT16 1.0m,	PT20 0.5m,							
PT20 2.5m,	PT28 0.0m,							
PT34 0.1m,	PT36 0.0m,							
PT40 0.0m,	PT42 0.0m,							
PT44 1.5m,	PT44 2.6m,							
PT45 0.0m,	PT46 0.0m,							
Duplicate								

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation: Date extracted	Due for extraction	Evaluation	Analysis: Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP080)								
PT01 2.0m,	PT10 0.5m,	22-Jan-2025	29-Jan-2025	05-Feb-2025	✓	30-Jan-2025	05-Feb-2025	✓
PT10 1.5m,	PT12 0.3m,							
PT12 0.7m,	PT13 1.0m,							
PT16 1.0m,	PT20 0.5m,							
PT20 2.5m,	PT28 0.0m,							
PT34 0.1m,	PT36 0.0m,							
PT40 0.0m,	PT42 0.0m,							
PT44 1.5m,	PT44 2.6m,							
PT45 0.0m,	PT46 0.0m,							
Duplicate								
Soil Glass Jar - Unpreserved (EP071)								
PT01 2.0m,	PT10 0.5m,	22-Jan-2025	30-Jan-2025	05-Feb-2025	✓	31-Jan-2025	11-Mar-2025	✓
PT10 1.5m,	PT12 0.3m,							
PT12 0.7m,	PT13 1.0m,							
PT16 1.0m,	PT20 0.5m,							
PT20 2.5m,	PT28 0.0m,							
PT34 0.1m,	PT36 0.0m,							
PT40 0.0m,	PT42 0.0m,							
PT44 1.5m,	PT44 2.6m,							
PT45 0.0m,	PT46 0.0m,							
Duplicate								
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080)								
PT01 2.0m,	PT10 0.5m,	22-Jan-2025	29-Jan-2025	05-Feb-2025	✓	30-Jan-2025	05-Feb-2025	✓
PT10 1.5m,	PT12 0.3m,							
PT12 0.7m,	PT13 1.0m,							
PT16 1.0m,	PT20 0.5m,							
PT20 2.5m,	PT28 0.0m,							
PT34 0.1m,	PT36 0.0m,							
PT40 0.0m,	PT42 0.0m,							
PT44 1.5m,	PT44 2.6m,							
PT45 0.0m,	PT46 0.0m,							
Duplicate								

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation: Date extracted	Due for extraction	Evaluation	Analysis: Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
Soil Glass Jar - Unpreserved (EP231X)								
PT01 2.0m,	PT10 0.5m,	22-Jan-2025	29-Jan-2025	21-Jul-2025	✓	29-Jan-2025	10-Mar-2025	✓
PT10 1.5m,	PT12 0.3m,							
PT12 0.7m,	PT13 1.0m,							
PT16 1.0m,	PT20 0.5m,							
PT20 2.5m,	PT28 0.0m,							
PT34 0.1m,	PT36 0.0m,							
PT40 0.0m,	PT42 0.0m,							
PT44 1.5m,	PT44 2.6m,							
PT45 0.0m,	PT46 0.0m,							
Duplicate								
EP231B: Perfluoroalkyl Carboxylic Acids								
Soil Glass Jar - Unpreserved (EP231X)								
PT01 2.0m,	PT10 0.5m,	22-Jan-2025	29-Jan-2025	21-Jul-2025	✓	29-Jan-2025	10-Mar-2025	✓
PT10 1.5m,	PT12 0.3m,							
PT12 0.7m,	PT13 1.0m,							
PT16 1.0m,	PT20 0.5m,							
PT20 2.5m,	PT28 0.0m,							
PT34 0.1m,	PT36 0.0m,							
PT40 0.0m,	PT42 0.0m,							
PT44 1.5m,	PT44 2.6m,							
PT45 0.0m,	PT46 0.0m,							
Duplicate								
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
Soil Glass Jar - Unpreserved (EP231X)								
PT01 2.0m,	PT10 0.5m,	22-Jan-2025	29-Jan-2025	21-Jul-2025	✓	29-Jan-2025	10-Mar-2025	✓
PT10 1.5m,	PT12 0.3m,							
PT12 0.7m,	PT13 1.0m,							
PT16 1.0m,	PT20 0.5m,							
PT20 2.5m,	PT28 0.0m,							
PT34 0.1m,	PT36 0.0m,							
PT40 0.0m,	PT42 0.0m,							
PT44 1.5m,	PT44 2.6m,							
PT45 0.0m,	PT46 0.0m,							
Duplicate								

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation: Date extracted	Due for extraction	Evaluation	Analysis: Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums								
Soil Glass Jar - Unpreserved (EP231X)								
PT01 2.0m,	PT10 0.5m,	22-Jan-2025	29-Jan-2025	21-Jul-2025	✓	29-Jan-2025	10-Mar-2025	✓
PT10 1.5m,	PT12 0.3m,							
PT12 0.7m,	PT13 1.0m,							
PT16 1.0m,	PT20 0.5m,							
PT20 2.5m,	PT28 0.0m,							
PT34 0.1m,	PT36 0.0m,							
PT40 0.0m,	PT42 0.0m,							
PT44 1.5m,	PT44 2.6m,							
PT45 0.0m,	PT46 0.0m,							
Duplicate								

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation: Date extracted	Due for extraction	Evaluation	Analysis: Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
Rinse Blank,	Field Blank	22-Jan-2025	30-Jan-2025	21-Jul-2025	✓	30-Jan-2025	21-Jul-2025	✓
EG035T: Total Recoverable Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)								
Rinse Blank,	Field Blank	22-Jan-2025	---	---	---	30-Jan-2025	19-Feb-2025	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
Rinse Blank,	Field Blank	22-Jan-2025	29-Jan-2025	29-Jan-2025	✓	30-Jan-2025	10-Mar-2025	✓
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
Rinse Blank,	Field Blank	22-Jan-2025	29-Jan-2025	29-Jan-2025	✓	30-Jan-2025	10-Mar-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
Rinse Blank,	Field Blank	22-Jan-2025	30-Jan-2025	05-Feb-2025	✓	30-Jan-2025	05-Feb-2025	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
Rinse Blank,	Field Blank	22-Jan-2025	29-Jan-2025	29-Jan-2025	✓	30-Jan-2025	10-Mar-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
Rinse Blank,	Field Blank	22-Jan-2025	30-Jan-2025	05-Feb-2025	✓	30-Jan-2025	05-Feb-2025	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
Rinse Blank,	Field Blank	22-Jan-2025	30-Jan-2025	05-Feb-2025	✓	30-Jan-2025	05-Feb-2025	✓

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	3	27	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	35	11.43	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	5	35	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard

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)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard

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) - Continued							
Total Mercury by FIMS	EG035T	2	10	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	8.33	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	8	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	14	7.14	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
pH in soil using a 0.01M CaCl2 extract	EA001	SOIL	In house: Referenced to Rayment and Lyons 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
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).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120, USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3).
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS). FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015. Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. 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).
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. 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.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS). FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015. The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3).
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).
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260. Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3).

Preparation Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl2 extract	EA001-PR	SOIL	In house: Referenced to Rayment and Lyons 4B1. 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion. 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
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.
QuEChERS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3).
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.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

QUALITY CONTROL REPORT

Work Order	: EM2501174	Page	: 1 of 15
Client	: ENVIRO-TECH CONSULTANTS PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MR KRIS TAYLOR	Contact	: Katie Davis
Address	: 162 Macquarie Street HOBART 7000	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: 03 6224 9197	Telephone	: +61-3-8549 9600
Project	: J0790 Lot 1 Grueber Avenue Cambridge	Date Samples Received	: 24-Jan-2025
Order number	: ----	Date Analysis Commenced	: 29-Jan-2025
C-O-C number	: ----	Issue Date	: 04-Feb-2025
Sampler	: MARCO SCALISI		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 21		
No. of samples analysed	: 21		

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
Andrew Lu	VOC Section Supervisor	Melbourne Organics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Inorganics, 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
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

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 (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6342128)									
EM2501123-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	24	25	6.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	12	10	18.8	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	7	7	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	64	49	27.6	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	65	49	27.3	0% - 50%
EM2501174-007	PT16 1.0m	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	3	3	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	9	8	0.0	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6342129)									
EM2501200-014	Anonymous	EG005T: Copper	7440-50-8	5	mg/kg	122	# 460	116	0% - 20%
EM2501174-018	PT45 0.0m	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	3	3	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit

Sub-Matrix: SOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6342129) - continued									
EM2501174-018	PT46 0.0m	EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	9	7	22.7	No Limit
EM2501200-014	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	28	15	60.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	140	149	6.3	0% - 20%
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 6339079)									
EM2500853-025	Anonymous	EA001: pH (CaCl2)	----	0.1	pH Unit	4.5	4.5	0.0	0% - 20%
EM2501174-009	PT20 2.5m	EA001: pH (CaCl2)	----	0.1	pH Unit	5.0	5.0	0.0	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6343550)									
EM2501128-001	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	2.2	2.6	14.1	No Limit
EM2501174-003	PT10 1.5m	EA055: Moisture Content	----	0.1 (1.0)*	%	2.0	2.8	31.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6343551)									
EM2501174-013	PT40 0.0m	EA055: Moisture Content	----	0.1 (1.0)*	%	<1.0	1.0	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6342127)									
EM2501123-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM2501174-007	PT18 1.0m	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6342130)									
EM2501174-018	PT46 0.0m	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM2501200-014	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6339501)									
EM2501174-001	PT01 2.0m	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

Sub-Matrix: SOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6339501) - continued									
EM2501174-001	PT01 2.0m	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
EM2501174-011	PT34 0.1m	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6339357)									
EM2501174-001	PT01 2.0m	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM2501174-011	PT34 0.1m	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6339502)									
EM2501174-001	PT01 2.0m	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EM2501174-011	PT34 0.1m	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6339357)									
EM2501174-001	PT01 2.0m	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EM2501174-011	PT34 0.1m	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6339502)									
EM2501174-001	PT01 2.0m	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit

Sub-Matrix: SOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report: Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6339502) - continued									
EM2501174-011	PT34 0.1m	EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	<50	0.0	No Limit
EP080: BTEXN (QC Lot: 6339367)									
EM2501174-001	PT01 2.0m	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EM2501174-011	PT34 0.1m	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6339036)									
EM2501174-001	PT01 2.0m	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0008	0.0005	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0020	0.0023	9.7	0% - 50%
EM2501174-011	PT34 0.1m	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0004	0.0005	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6339036)									
EM2501174-001	PT01 2.0m	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0003	0.0003	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EM2501174-011	PT34 0.1m	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6339036)									

Sub-Matrix: SOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report: Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6339036) - continued									
EM2501174-001	PT01 2.0m	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EM2501174-011	PT34 0.1m	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 6339036)									
EM2501174-001	PT01 2.0m	EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0028	0.0031	10.2	0% - 50%
		EP231X: Sum of PFAS (WA DER List)	---	0.0002	mg/kg	0.0031	0.0034	9.2	0% - 50%
EM2501174-011	PT34 0.1m	EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0004	0.0005	22.2	No Limit
		EP231X: Sum of PFAS (WA DER List)	---	0.0002	mg/kg	0.0004	0.0005	22.2	No Limit

Sub-Matrix: WATER

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report: Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 6342972)									
EM2501054-011	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.590	0.595	0.8	0% - 20%
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	1.37	1.36	0.9	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.012	0.012	0.0	0% - 50%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	8.94	8.84	1.1	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.905	0.910	0.6	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.255	0.252	1.0	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	15.1	14.7	3.1	0% - 20%
EM2501125-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0003	0.0003	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.005	0.005	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.580	0.575	2.6	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.038	0.039	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.010	0.009	0.0	No Limit

Sub-Matrix: WATER

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 6342972) - continued									
EM2501125-001	Anonymous	EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.892	0.878	1.5	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6340120)									
EM2501136-010	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EM2501218-015	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6339092)									
EM2500958-051	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6339091)									
EM2500958-051	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	400	410	2.9	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	100	100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	170	190	15.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6339992)									
EM2501148-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EM2501005-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	230	260	13.2	0% - 50%
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6339091)									
EM2500958-051	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	260	280	11.1	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	360	380	3.7	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	110	140	21.4	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6339992)									
EM2501148-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EM2501005-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	220	250	12.8	0% - 50%
EP080: BTEXN (QC Lot: 6339992)									

Sub-Matrix: WATER

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 6339992) - continued									
EM2501148-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EM2501005-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	1	1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	2	2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	23	25	7.9	0% - 50%
		EP080: ortho-Xylene	95-47-6	2	µg/L	8	8	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<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
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6342128)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	123 mg/kg	94.4	70.0	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	1.23 mg/kg	66.4	50.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	106	70.0	130
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.9 mg/kg	98.0	70.0	130
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.4 mg/kg	96.6	70.0	130
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	97.1	70.0	130
EG005T: Zinc	7440-66-6	5	mg/kg	<5	182 mg/kg	75.3	70.0	130
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6342129)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	123 mg/kg	91.7	70.0	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	1.23 mg/kg	64.3	50.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	103	70.0	130
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.9 mg/kg	96.3	70.0	130
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.4 mg/kg	93.9	70.0	130
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	95.2	70.0	130
EG005T: Zinc	7440-66-6	5	mg/kg	<5	182 mg/kg	73.5	70.0	130
EA001: pH in soil using 0.01M CaCl extract (QCLot: 6339079)								
EA001: pH (CaCl2)	---	---	pH Unit	---	4 pH Unit	100	98.8	101
				---	7 pH Unit	100	99.3	101
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6342127)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.64 mg/kg	91.4	69.0	128
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6342130)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.64 mg/kg	86.7	69.0	128
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6339501)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	104	85.7	123
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	107	81.0	123
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	102	83.6	120
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	100	81.3	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	104	79.4	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	107	81.7	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	109	78.3	124

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: 6339501) - continued								
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	111	79.9	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	104	76.9	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	108	80.9	130
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	3 mg/kg	103	70.0	121
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	115	80.4	130
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	103	70.2	123
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	104	67.9	122
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	105	65.8	123
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	105	65.8	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6339357)								
EP080: C6 - C9 Fraction	---	10	mg/kg	<10	36 mg/kg	90.3	58.6	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6339502)								
EP071: C10 - C14 Fraction	---	50	mg/kg	<50	790 mg/kg	100	75.9	128
EP071: C15 - C28 Fraction	---	100	mg/kg	<100	2730 mg/kg	100	82.0	123
EP071: C29 - C36 Fraction	---	100	mg/kg	<100	1410 mg/kg	100	82.4	121
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6339357)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	89.3	59.3	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6339502)								
EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	1080 mg/kg	102	77.0	130
EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	3640 mg/kg	99.6	81.5	120
EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	270 mg/kg	92.3	73.3	137
EP080: BTEXN (QCLot: 6339357)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	90.2	61.6	117
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	92.0	65.8	125
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	91.1	65.8	124
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	96.1	64.8	134
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	99.2	68.7	132
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	89.3	61.8	123
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6339036)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00111 mg/kg	80.9	72.0	128
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00114 mg/kg	81.9	67.0	130
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	82.1	68.0	136
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6339036)								

Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6339036) - continued								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	86.4	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.0	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	80.3	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.2	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.9	69.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6339036)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	84.2	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00119 mg/kg	88.1	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	88.8	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00121 mg/kg	130	70.0	130
EP231P: PFAS Sums (QCLot: 6339036)								
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.0002	mg/kg	<0.0002	---	---	---	---
EP231X: Sum of PFAS (WA DER List)	---	0.0002	mg/kg	<0.0002	---	---	---	---

Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 6342972)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.9	89.2	110
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	86.8	86.4	115
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	99.3	89.0	112
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.7	88.3	111
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.4	88.3	112
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.8	88.8	113
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	110	90.0	115
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6340120)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	96.2	73.4	119
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6339092)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	82.5	42.8	114
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	94.0	48.6	119
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	94.6	47.0	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	99.1	49.5	119
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	102	49.4	121
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	98.4	48.4	122

Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6339092) - continued								
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	103	50.3	124
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	108	50.0	126
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	103	49.4	127
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	122	48.7	128
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	102	54.5	134
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	103	56.1	134
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	104	55.6	135
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	108	54.4	126
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	119	54.5	126
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	105	54.4	126
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6339091)								
EP071: C10 - C14 Fraction	---	50	µg/L	<50	4421 µg/L	79.2	47.2	122
EP071: C15 - C28 Fraction	---	100	µg/L	<100	15219 µg/L	85.5	52.9	131
EP071: C29 - C36 Fraction	---	50	µg/L	<50	7904 µg/L	82.8	50.4	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6339992)								
EP080: C6 - C9 Fraction	---	20	µg/L	<20	360 µg/L	104	66.2	134
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6339091)								
EP071: >C10 - C16 Fraction	---	100	µg/L	<100	6085 µg/L	79.6	49.1	125
EP071: >C16 - C34 Fraction	---	100	µg/L	<100	20300 µg/L	84.3	51.6	128
EP071: >C34 - C40 Fraction	---	100	µg/L	<100	1456 µg/L	83.5	47.2	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6339992)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	102	66.2	132
EP080: BTEXN (QCLot: 6339992)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	101	68.8	127
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	106	72.9	129
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	104	71.7	130
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	109	72.3	136
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	111	75.9	134
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	106	68.3	131

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: SOIL

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6342128)							
EM2501135-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	89.6	78.0	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	94.9	79.7	116
		EG005T: Chromium	7440-47-3	50 mg/kg	88.1	79.0	121
		EG005T: Copper	7440-50-8	250 mg/kg	96.8	80.0	120
		EG005T: Lead	7439-92-1	250 mg/kg	93.5	80.0	120
		EG005T: Nickel	7440-02-0	50 mg/kg	94.7	78.0	120
		EG005T: Zinc	7440-66-6	250 mg/kg	88.7	80.0	120
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6342129)							
EM2501174-019	Duplicate	EG005T: Arsenic	7440-38-2	50 mg/kg	103	78.0	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	102	79.7	116
		EG005T: Chromium	7440-47-3	50 mg/kg	102	79.0	121
		EG005T: Copper	7440-50-8	250 mg/kg	104	80.0	120
		EG005T: Lead	7439-92-1	250 mg/kg	104	80.0	120
		EG005T: Nickel	7440-02-0	50 mg/kg	103	78.0	120
		EG005T: Zinc	7440-66-6	250 mg/kg	98.6	80.0	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6342127)							
EM2501135-001	Anonymous	EG035T: Mercury	7439-97-6	0.5 mg/kg	105	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6342130)							
EM2501174-019	Duplicate	EG035T: Mercury	7439-97-6	0.5 mg/kg	107	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6339501)							
EM2501174-003	PT10 1.5m	EP075(SIM): Acenaphthene	83-32-9	3 mg/kg	93.2	77.2	116
		EP075(SIM): Pyrene	129-00-0	3 mg/kg	101	65.5	136
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6339357)							
EM2501174-002	PT10 0.5m	EP080: C6 - C9 Fraction	---	28 mg/kg	75.1	33.4	124
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6339502)							
EM2501174-002	PT10 0.5m	EP071: C10 - C14 Fraction	---	790 mg/kg	102	71.2	125
		EP071: C15 - C28 Fraction	---	2730 mg/kg	102	75.6	122
		EP071: C29 - C36 Fraction	---	1410 mg/kg	103	78.0	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6339357)							
EM2501174-002	PT10 0.5m	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	65.2	30.8	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6339502)							
EM2501174-002	PT10 0.5m	EP071: >C10 - C16 Fraction	---	1080 mg/kg	103	72.2	128
		EP071: >C16 - C34 Fraction	---	3640 mg/kg	102	76.5	119
		EP071: >C34 - C40 Fraction	---	270 mg/kg	102	66.8	138

Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 6339357)							
EM2501174-002	PT10 0.5m	EP080: Benzene	71-43-2	2 mg/kg	106	54.4	127
		EP080: Toluene	108-88-3	2 mg/kg	107	57.1	131
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6339036)							
EM2501174-002	PT10 0.5m	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00111 mg/kg	85.4	72.0	128
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00114 mg/kg	86.5	67.0	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00118 mg/kg	71.6	68.0	136
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6339036)							
EM2501174-002	PT10 0.5m	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	94.0	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	90.2	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	86.1	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	91.2	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	89.1	69.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6339036)							
EM2501174-002	PT10 0.5m	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	95.9	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00119 mg/kg	99.6	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	96.1	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00121 mg/kg	73.0	70.0	130

Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 6342972)							
EM2501054-011	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	100	82.0	123
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	87.1	81.8	123
		EG020A-T: Chromium	7440-47-3	1 mg/L	99.8	78.9	119
		EG020A-T: Copper	7440-50-8	1 mg/L	# Not Determined	80.4	118
		EG020A-T: Lead	7439-92-1	1 mg/L	103	80.5	121
		EG020A-T: Nickel	7440-02-0	1 mg/L	103	80.0	118
		EG020A-T: Zinc	7440-66-6	---	# Not Authorised	74.0	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6340120)							
EM2501136-011	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	94.5	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6339091)							
EM2501200-018	Anonymous	EP071: C10 - C14 Fraction	---	4421 µg/L	86.8	48.0	126
		EP071: C15 - C28 Fraction	---	15219 µg/L	89.5	51.7	132
		EP071: C29 - C36 Fraction	---	7904 µg/L	87.3	50.5	127

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6339992)							
EM2501069-001	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	96.8	33.9	126
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6339091)							
EM2501200-018	Anonymous	EP071: >C10 - C16 Fraction	----	6085 µg/L	87.1	48.0	126
		EP071: >C16 - C34 Fraction	----	20300 µg/L	87.6	50.4	130
		EP071: >C34 - C40 Fraction	----	1456 µg/L	86.4	47.4	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6339992)							
EM2501069-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	92.8	34.0	122
EP080: BTEXN (QCLot: 6339992)							
EM2501069-001	Anonymous	EP080: Benzene	71-43-2	20 µg/L	107	56.3	133
		EP080: Toluene	108-88-3	20 µg/L	111	60.4	132

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2502406	Page	: 1 of 4
Client	: ENVIRO-TECH CONSULTANTS PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MR KRIS TAYLOR	Telephone	: +61-3-8549 9600
Project	: J0790 Lot 1 Grueber Avenue Cambridge	Date Samples Received	: 14-Feb-2025
Site	: ----	Issue Date	: 20-Feb-2025
Sampler	: MARCO SCALISI	No. of samples received	: 3
Order number	: ----	No. of samples analysed	: 3

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, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

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
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag (EA200)							
PT07 0.0m, PT19 0.0m, PT32 0.0m	22-Jan-2025	----	----	----	17-Feb-2025	21-Jul-2025	✓

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

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
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining

QUALITY CONTROL REPORT

Work Order	: EM2502406	Page	: 1 of 3
Client	: ENVIRO-TECH CONSULTANTS PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MR KRIS TAYLOR	Contact	: Katie Davis
Address	: 162 Macquarie Street HOBART 7000	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: 03 6224 9197	Telephone	: +61-3-8549 9600
Project	: J0790 Lot 1 Grueber Avenue Cambridge	Date Samples Received	: 14-Feb-2025
Order number	: ----	Date Analysis Commenced	: 17-Feb-2025
C-O-C number	: ----	Issue Date	: 20-Feb-2025
Sampler	: MARCO SCALISI		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 3		
No. of samples analysed	: 3		

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
MINNIE TRAN	Approved Asbestos Identifier	Melbourne Asbestos, 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%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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.

- **No Method Blank (MB) or Laboratory Control Spike (LCS) Results are required to be reported.**

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.**

Appendix 8 Quality Assurance

The data quality assurance and control (QA/QC) procedures adopted by Envirotech provide a uniform approach to estimate whether the required data quality objectives (DQO) have been achieved. The procedure involves an assessment of the reliability and precision of the data in making inferences about the environment being assessed. The method is based on guidance from the following sources:

- Australian Standard (AS) 4482.1-2005: Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Nonvolatile and semivolatile compounds.
- National Environment Protection Council (NEPC), National Environment Protection (Assessment of Site Contamination) Amendment Measure No. 1 2013 (NEPM), Schedule B2: Guideline on site characterisation.
- NEPC – National Environment Protection (Site Contamination Assessment) Amendment Measure No. 1 2013 (NEPM), Schedule B3: Guideline on Laboratory Analysis of Potentially Contaminated Soils.
- United States Environmental Protection Agency (USEPA) – Guidance on Systematic Planning Using the Data Quality Objectives Process (EPA QA/G-4).
- USEPA – Guidance on Environmental Data Verification and Data Validation (EPA QA/G-8).

Quality Assurance Procedure

The following data quality objectives, measures, and acceptance criteria were adopted to verify compliance with the planned QA procedures:

Quality Assurance Process	Data Quality Element	Objectives and Measure	Acceptance Criteria
Standard Procedures	Comparability, Reproducibility, Representativeness	Standard field sampling procedures and forms used	No deviation from standard procedure and forms used
Equipment Calibration	Accuracy	All equipment calibrated in accordance with manufacturers specifications	All equipment calibrated in accordance with manufacturers specifications
Testing Method Accreditation	Accuracy and Comparability	NATA accredited methods used for all analyses determined	Primary laboratory to use NATA accredited methods for all analytes determined
Quality Control Sampling Frequency	Precision and Repeatability	Field QC sampling frequency in accordance with AS4482.1-2005	Field Duplicates – ≥ 1 in 20 primary samples
	Accuracy, Precision and Comparability	Laboratory QC analysis frequency in accordance with NEPC (2013), Schedule B3	Method Blanks – at least 1 per process batch Matrix Spikes – at least 1 per matrix type per process batch Matrix Spikes Duplicates – at least 1 per matrix type per process batch
Sample Preservation, Handling and Holding Times	Accuracy	Samples appropriately preserved upon collection, stored, and transported, and analyzed within holding times	Sample containers, holding times and preservation in accordance laboratory specific method requirements.
Data Management	Accuracy	No errors in data transcription	Entry of field data verified by peer.
Data Useability	Completeness	Limits of reporting less than adopted beneficial use investigation levels. Sample volumes and analytical methods selected to enable required limits of reporting to be achieved	Limits of reporting less than investigation levels.

Quality Control Sampling and Analysis

The following data quality objectives, measures and acceptance criteria were adopted to evaluate the validity of the analytical data produced

Quality Assurance Process	Data Quality Element	Objectives and Measure	Acceptance Criteria
Field Duplicate Sampling and Analysis	Precision and Field Repeatability	Field duplicate samples used to assess the variability in analyte concentration between samples collected from the sample location and the reproducibility of the laboratory analysis. Where required, resubmission of previously analyzed samples for chemicals within their holding times may be undertaken to further assess level of precision	Analyzed for same chemicals as primary sample relative percentage difference (RPD) <30% of mean concentration where both concentrations >20 x limit of reporting RPD <50% of mean concentration where higher concentration 10 – 20 x limit of reporting. RPD - No limit where both concentrations <10 x limit of reporting
Laboratory QC Analysis	Laboratory Precision and Accuracy	Method Blank	Below limit of reporting
		Matrix spike recovery	Recovery 70% – 130% or dynamic recovery limits specified by laboratory. However, note that recovery of phenols is generally significantly lower and a recovery in the range 20% to 130% is considered acceptable by most laboratories.
		Matrix spike recovery duplicate	RPD < 30%, or as specified by the laboratory.

Data Verification and Validation

The data validation process involved the checking of analytical procedure compliance with acceptance criteria and an assessment of the accuracy and precision of analytical data from the range of quality control indicators generated from both the sampling and analytical programmes.

The checks undertaken are summarised in the attached data validation checklist tables (Table A) (one table per sample batch/delivery group). Field replicate analytical results and blank sample reports relevant to the project are summarised in Tables B and Table C respectively in this attachment.

Field Duplicate RPDs

All of the calculated RPDs were below the adopted acceptance criteria.

Rinse Blanks

There were no laboratory detections in rinse blanks indicating a low risk of cross contamination whilst sampling and during transit.

Data Suitability

Based on the quality assurance procedures applied, and the results of the quality control samples, the sample data is representative of chemical concentrations in the environmental media sampled at the time of sampling and considered suitable to be used for the intended purpose in forming conclusions relating to the contamination at the site.

Table A Data Validation Checklist – includes WMS

Quality Assurance Process	Objectives and Measures	Acceptance Criteria	Source of Information	ALS Soil Sample	
				Acceptance Criteria Met?	Notes/Details of Nonconformance
Standard Procedures	Standard field sampling procedures and forms used	No deviation from standard procedure and forms used	Bore logs, field sheets, COC's data tables	Yes	
Equipment Calibration	Al equipment calibrated in accordance with manufacture specifications	Al equipment calibrated in accordance with manufacture specifications	Calibration certificate/records	Yes	PID not used in this instance given volatiles were not a contaminant of primary concern.
Testing Method Accreditation	NATA accredited methods for all analysis methods determined	Primary and secondary laboratories to used NATA accredited methods for all analytes determined	Laboratory report	Yes	
Quality Control Sampling Frequency	Field QC sampling frequency in accordance with AS4482.1-2005	Field duplicates >= 1 in 20 primary samples	QA/QC register (within field book)	Yes	100% of the samples complied for duplicate comparison pair PT12 0.7 and Duplicate.
		Secondary duplicates >= 1 in 20 primary samples	QA/QC register (within field book)	No	No secondary laboratory used in this instance
		Rinse blanks >= 1 per day, per matrix, per equipment	QA/QC register (within field book)	Yes	No exceedances above LOR
		Trip blanks >= 1 per esky containing samples for volatiles	QA/QC register (within field book)	NA	Volatiles were not a contaminant of concern.
	Laboratory QC analysis frequency in accordance with NEPC 2013	Laboratory duplicates at least 1 in 10 analysis or 1 per process batch	Laboratory reports	Yes	
		Method blanks – al lease 1 per process batch	Laboratory reports	Yes	
		Surrogate recoveries – all samples spiked where appropriate	Laboratory reports	Yes	
		Laboratory control samples – at least 1 per process batch	Laboratory reports	Yes	
		Matrix spike – at least 1 per matrix type per process batch	Laboratory reports	Yes	
Sample Preservation Holding and Handling Times	Samples appropriately preserved upon collection, stored, and transported and analysed within holding times	In accordance with laboratory specific method requirements. Unless specific method indicates otherwise, soil and water samples should be stored, transported, and received by the laboratory at <6°	Laboratory reports	Yes	Within holding times. Samples sent at 3°C and arrived at the lab at 15.2°C with ice bricks present.
Data Management	No errors in data transcription	Entry of field data verified by peer	10% check of electronically imported data. 100% check of manually entered data (field parameters, gauging data) Evidence of checks recorded in project file	Yes	
Data Usability	Limits of reporting less than investigation limits	Limits of reporting less than relevant investigation levels	Results tables	Yes	

Quality Assurance Process	Objectives and Measures	Acceptance Criteria	How	Acceptance Criteria Met?	Notes/Details of Nonconformance
Field duplicate (interlaboratory field duplicate) Sampling and Analysis	Field Duplicate samples used to assess the variability in analyte concentration between samples collected from sample location and reproducibility of the laboratory analysis. Where required submission of the previous analysed samples for chemicals within their holing times may be undertaken to further assess the level of precision	Analysed for the same chemicals as the primary sample	Automated excel formulation	Yes	
		RPD <30% of mean concentration where both concentration >20 x LOR			
		RPD <50% of mean concentration where both concentration 10-20 x LOR			
		RPD no limit where both concentrations <20 x LOR			
Secondary duplicate (interlaboratory field duplicate) Sampling and Analysis	Results and accurate and free from laboratory error. Secondary duplicate samples sent to a secondary laboratory to assess the accuracy of the analyte concentration reported by the primary laboratory.	Analysed for the same chemicals as the primary sample	Automated excel formulation	No	No secondary laboratory used in this instance
		RPD <30% of mean concentration where both concentration >20 x LOR			
		RPD <50% of mean concentration where both concentration 10-20 x LOR			
		RPD no limit where both concentrations <20 x LOR			
Field and Rinse Blank Preparation & Analysis	Cross contamination of samples does not occur between sampling locations due to carry over from sampling equipment.	Analyte concentrations <LOR's	Automated excel formulation	Yes	
Trip Blank Sampling & Analysis	Cross contamination between samples does not occur in transit or as an artefact of the sampling handling procedures	Analyte concentrations <LOR's	Automated excel formulation	NA	Volatiles were not a contaminant of concern.
Laboratory Method Blanks	Method blanks are prepared to represent the sample matrix as closely as possible and prepared, extracted, digested and analysed exactly like the field samples. These blanks are used by the laboratory to assess contamination introduced during the sample preparation activities.	Analyte concentrations <LOR	Laboratory reports	Yes	
Laboratory Duplicates	Laboratory duplicates are used to test the precision of laboratory measurements	As specified by laboratory	Laboratory reports	No	RPD exceeds LOR based limits for Copper (Anonymous): 116 % achieved and 0% - 20% expected Low levels of copper detected in all samples and result not of concern in this instance.
Laboratory controls	Laboratory control samples are used to assess overall method performance. In general, these samples are similar in composition to environmental samples, and contain known amounts of analytes of interest.	Dynamic recovery limits as specified by laboratory	Laboratory reports	Yes	
Matrix Spike Recovery	Matrix spike is an aliquot of a sample spiked with a known concentration of target analytes. Spiking occurs prior to sample preparation and analysis, and results are used to assess the bias of a method in a given sample matrix.	Recovery 70 – 130% or dynamic recovery limits if specified by laboratory	Laboratory reports	No	MS recovery not determined, background level greater than or equal to 4x spike level (Anonymous): Copper - MS recovery not determined Zinc - 74.0-120% expected and data result not authorised Low levels of copper and zinc detected in all samples and result not of concern in this instance.
Surrogate Recovery	Surrogates are organic compounds that are similar in chemical composition to analytes of interest and are spiked into environmental samples prior to sample preparation and analysis. Surrogate recoveries are used to evaluate matrix interference on a sample specific basis.	Dynamic recovery limits as specified by laboratory	Laboratory reports	Yes	
Quality Control Sample Frequency Outliers	If one or two data points appear to be too high or low for the set of data, they should not be included when calculating QC ranges.		Laboratory reports	No	Laboratory Duplicates (DUP): TRH - Semivolatile Fraction 8.33% expected and 10.00% Expected Matrix Spikes (MS): PAH/Phenols (GC/MS - SIM) 0.0% Actual and 5.0% Expected Low levels of copper detected in all samples and result not of concern in this instance. Very low detection PAH's (<LOR) and semivoltine (<LOR) and outliers not of concern.
Certified Reference Material	CRM samples are used to monitor the accuracy of analysis performed by the laboratory.	As specified by laboratory (generally dynamic recovery limits). Usually not performed and assessed based on LCS results	Laboratory reports	Yes	

Table B Soil Duplicate Pair Comparisons

Analyte	Moisture Content	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1.2.3.cd)pyrene	Dibenz(a.h)anthracene	Benzo(g.h.i)perylene	Sum of polycyclic aromatic hydrocarbons	Benzo(a)pyrene TEQ (zero)
LOR	1	5	1	2	5	5	2	5	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
PT12 0.7	2.0	<5	<1	4.0	<5	<5	4.0	6.0	<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
Duplicate	1.1	<5	<1	4.0	<5	<5	<2	8.0	<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	<0.5
RPD %	58.1	0.0	0.0	0.0	0.0	0.0	66.7	28.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Impact Level	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
Compliance	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Analyte	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (LOR)	C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)	C6 - C10 Fraction	F1	>C10 - C16 Fraction	>C16 - C34 Fraction	>C10 - C40 Fraction (sum)	F2	Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Sum of BTEX	Naphthalene
LOR	0.5	0.5	10	50	100	100	50	10	10	50	100	100	50	0.2	0.5	0.5	0.5	0.5	0.5	0.2	1
PT12 0.7	0.6	1.2	<10	<50	<100	<100	<50	<10	<10	<50	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
Duplicate	0.6	1.2	<10	<50	<100	<100	<50	<10	<10	<50	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
RPD %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Impact Level	NL	LOW	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
Compliance	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

NL - No Limit Applies (complies)
NO LOR - No Limits of Reporting Available for comparison
LOW - Low level detections require RPD <50% to comply
MEDIUM - Medium level detections require RPD <30% to comply
HIGH - High level detections require RPD <15% to comply

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Analyte	Perfluorobutane sulfonic acid (PFBS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 F	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)
LOR	0.0002	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002
PT12 0.7	<0.0002	0.0	0.0	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0	0.0
Duplicate	<0.0002	<0.0002	0.0	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0	0.0
RPD %	0.0	85.7	43.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Impact Level	NL	NL	LOW	NL	NL	NL	NL	NL	NL	NL	NL	NL	LOW	LOW
Compliance	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

NL - No Limit Applies (complies)
NO LOR - No Limits of Reporting Available for comparison
LOW - Low level detections require RPD <50% to comply
MEDIUM - Medium level detections require RPD <30% to comply
HIGH - High level detections require RPD <15% to comply

Table C Soil Rinse and Filed Blanks

Sample	Date	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1.2.3.cd)pyrene	Dibenz(a.h)anthracene	Benzo(g.h.i)perylene	Sum of polycyclic aromatic hydrocarbons	Benzo(a)pyrene TEQ (zero)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L
LOR		0.001	0.0001	0.001	0.001	0.001	0.001	0.005	0.0001	1	1	1	1	1	1	1	1	1	1	1	1	0.5	1	1	1	0.5	0.5
Rinse Blank	22/01/2025	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.0001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
Field Blank	22/01/2025	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.0001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5

Sample	Date	C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C40 Fraction (sum)	>C10 - C16 Fraction minus Naphthalene (F2)	Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Sum of BTEX	Naphthalene
		Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L	Âµg/L
LOR		20	50	100	50	50	20	20	100	100	100	100	100	1	2	2	2	2	2	1	5
Rinse Blank	22/01/2025	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100	<1	<2	<2	<2	<2	<2	<1	<5
Field Blank	22/01/2025	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100	<1	<2	<2	<2	<2	<2	<1	<5