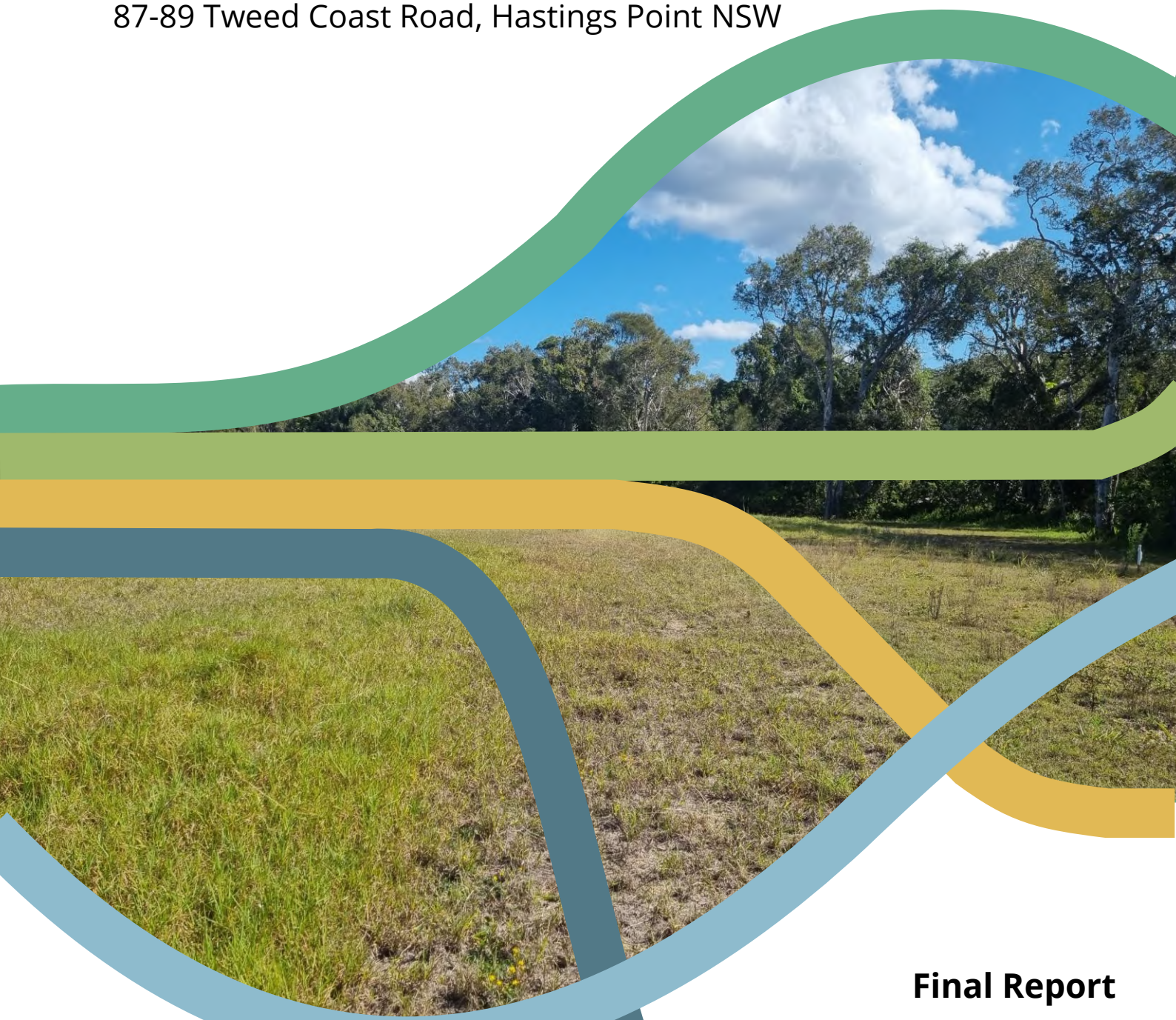
Detailed Site Investigation

Proposed Seniors Housing Development
87-89 Tweed Coast Road, Hastings Point NSW



Final Report

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Project Details

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Document	P2108580JR04V02
Director	Daniel Martens
Manager	Mo Shahrokhian
Principal Author	Nathan Foster | BSc (Hons)

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Suite 201, 20 George St, Hornsby, NSW 2077, Australia
ACN 070 240 890 ABN 85 070 240 890
P +61-2-9476-9999 | mail@martens.com.au | www.martens.com.au

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Glossary of Terms

ABC	Ambient background concentration
ACL	Added contaminant level
ACM	Asbestos containing material
ADWG	Australian Drinking Water Guidelines
AEC	Area of environmental concern
ANZG	Australian and New Zealand Guidelines
AS	Australian Standard
ASS	Acid sulfate soils
BH	Borehole
BoM	Bureau of Meteorology
BTEXN	Benzene, toluene, ethylbenzene, xylene, naphthalene
CEC	Cation exchange capacity
CLM	Contaminated land management
COC	Contaminant of custody
COPC	Contaminants of potential concern
CRC CARE	Cooperative Research Centre for Contamination Assessment and Remediation of the Environment
CSM	Conceptual site model
DCP	Development control plan
DNAPL	Dense nonaqueous phase liquid
DO	Dissolved oxygen
DQI	Data quality indicator
DQO	Data quality objectives
DSI	Detailed site investigation
DUAP	Department of Urban Affairs and Planning (NSW)
EC	Electrical conductivity
EIL	Ecological Investigation Level
ESL	Ecological screening level
GIL	Groundwater investigation level
GME	Groundwater monitoring event
HDPE	High density polyethylene
HIL	Health investigation level
HEPA	Heads of EPAs Australia and New Zealand
HSL	Health screening level
IA	Investigation area
ILU	Independent living units
LEP	Local environmental plan
LNAPL	Light nonaqueous phase liquid
LOR	Limit of reporting
MA	Martens & Associates Pty Ltd
mAHD	Metres Australian Height Datum
mBGL	Metres Below Ground Level
µm	Micrometre
mL	Millilitre
mV	Millivolt
MW	Monitoring well
NATA	National Association of Testing Authorities
NEPC	National Environmental Protection Council
NEPM	National Environmental Protection Measure
NHMRC	National Health and Medical Research Council
NRMMC	National Resource Management Ministerial Council
NSW DEC	NSW Department of Conservation
NSW DPE	NSW Department of Planning and Environment
NSW EPA	NSW Environmental Protection Authority

NUDLC	National Uniform Drillers Licensing Committee
OCP	Organochlorine pesticides
OPP	Organophosphorus pesticides
PACM	Potential asbestos containing material
PAH	Polycyclic aromatic hydrocarbons
PFAS	Per- and polyfluoroalkyl substances
PCB	Polychlorinated biphenyls
PID	Photo-ionisation detector
PQL	Practical quantitation limit
PSH	Phase separated hydrocarbons
PSI	Preliminary site investigation
QA	Quality assurance
QC	Quality control
RAC	Residential aged care
RPD	Relative percentage difference
SAC	Site acceptance criteria
SAQP	Sampling, analysis, and quality plan
SEPP	State Environmental Planning Policy
SOP	Standard operating procedure
SRA	Sample receipt advice
SSDA	State significant development application
SVOC	Semi volatile organic compounds
SWL	Standing water level
TDS	Total dissolved solids
TOC	Top of casing
TP	Test pit
TRH	Total recoverable hydrocarbons
USCS	Unified Soil Classification System
VOC	Volatile organic compounds

1 Introduction

1.1 Overview

This report, prepared by Martens and Associates (MA), documents a Detailed Site Investigation (DSI) completed at 87-89 Tweed Coast Road, Hastings Point NSW (the Site), on behalf of TriCare (Hastings) Limited (the Client). The DSI been prepared to evaluate land contamination to support a state significant development application (SSDA) to the NSW Department of Planning and Environment (NSW DPE) for proposed seniors living development at the Site. This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) for the development proposal (dated 20 April 2022).

The DSI considers the land comprising the Site as the nominated investigation area (IA), which is shown in Appendix A (Map 01).

This DSI documents the findings of soil and groundwater media investigations only. Investigation and reporting on radiological risks, also identified at the Site, have been completed separately to this DSI (see Section 4.1.1).

1.2 Proposed Development

The TriCare Hastings Point development comprises both independent living units (ILUs) and a residential aged care (RAC) home, that will be supported by a range of other services. The development will consist of four, three-storey buildings (Buildings D to G), each with one level of basement car parking. Specifically, the proposal includes:

- A 47 place RAC (Building D) comprising:
  - Individual private rooms with ensuites facilities;
  - Shared dining, lounge and sitting rooms;
  - Café;
  - Kitchen;
  - Serveries;
  - Nurses stations;
  - Offices;
  - Staff room and facilities;
  - Waste room; and
  - Loading bay.

- 51 ILUs split across 3 buildings, including:
  - 24 ILUs in Building E
  - 18 ILUs in Building F
  - 9 ILUs in Building G.

Complimenting the ILUs and RAC, the development offers a range of communal facilities for entertainment, health, active and passive recreation. These facilities include:

- Bowling Green and pavilion with bowls store, amenities, kitchen, and covered seating area;
- Indoor swimming pool and spa, with amenities and viewing area;
- Perimeter walking trail; and
- Landscaped gardens.

The proposed development will provide an important contribution to supporting the need for seniors accommodation and care within the Kingscliff locality.

No changes to the existing Stage 1 development are proposed.

Development plans (Arqus Design, 2024) and a survey plan are provided in Appendix A.

1.3 Objectives

The objectives of the DSI are:

- Review previous site documentation and identify areas of environmental concern (AEC) and associated contaminants of potential concern (COPC) to assist with the development of a conceptual site model (CSM) for the investigation of the IA.
- Quantify potential risks from contamination within the IA by undertaking a program of soil and groundwater sampling, and laboratory analysis.
- Provide commentary on land contamination within in the IA, with respect to the proposed residential land use of the Site, and outline recommendations for additional investigations, remediation, or management considering investigation findings.

1.4 Scope of Works

To address the objectives of the project, the following scope of works was proposed:

- Review of available online mapping resources.
- Review of available online hydrogeological and groundwater information.

- Review of previous reports documenting environmental investigations completed at the Site.
- Completion of intrusive investigations to review soil conditions, collect representative soil samples, and install groundwater monitoring wells.
- Collect groundwater samples.
- Laboratory analysis of soil and groundwater samples for COPC identified by the conceptual site model (CSM).
- Preparation of a DSI report in accordance with relevant guidelines.

1.5 Regulatory Guidance

The following regulatory guidance documents have been considered for the preparation of this report:

- NSW DUAP (1998) Managing Land Contamination: Planning Guidelines.
- NEPC (2013a) Schedule B1: Guideline on Investigation Levels for Soil and Groundwater.
- NEPC (2013b) Schedule B2: Guideline on Site Characterisation.
- NSW DEC (2007) Guidelines for the Assessment and Management of Contamination Groundwater.
- NSW EPA (2017) Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme.
- NSW EPA (2020) Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites.
- NSW EPA (2022) Contaminated Land Guidelines: Sampling design part 1 – application.
- HEPA (2020) PFAS National Environmental Management Plan, Version 2.0.
- State Environmental Planning Policy (Resilience and Hazards) 2021.

2 Site Description

2.1 Site Identification

The IA identification details, and general descriptions are summarised in Table 1. The location of the IA and general surrounding land is shown in Appendix A (Map 01).

Table 1: IA identification information

Item	Detail
IA address	87-89 Tweed Coast Road, Hastings Point NSW
Legal identifiers	Lot 1 DP786570
Approximate investigation area	Approximately 2.13 ha (By calculation – SIX Maps)
Geographic site coordinates	North western corner (datum GDA2020 – MGA56): • Easting: 556087 • Northing: 6861947 (Source: SIX Maps)
Local government area	Tweed Shire Council
Zoning	DM – Deferred Matter R1 - General Residential (Tweed Local Environmental Plan 2014)
Current land use(s)	Recreational / open space
Proposed land use(s)	Aged care facility
Surrounding land use	• North – residential and undeveloped land. • East – existing site development area, followed by Tweed Coast Road and coastal bushland adjacent to South Coral Sea. • South – undeveloped land, including a service station and telephone exchange located to the south east of the IA. • West – SEPP wetlands and Gudgera Creek, followed by undeveloped bushland.

2.2 Environmental Setting

Information relating to the environmental setting of the site is presented in Table 2.

Table 2: Environmental setting information

Item	Detail
Topography	The topography of the surrounding landscape is characterised by slopes <3% and local relief between<5 to 10 m. The outer barrier dune system has been extensively mined and in many locations the original dune form has been removed and the ground surface is generally hummocky. Elevation of the IA ranges from approximately 2.0 to 6.0 mAHD, with slopes declining to the west, toward Cudgera Creek. A topographic map of the IA is provided in Appendix B (Map 02).
Geology	Geological mapping produced by the NSW Geological Survey (Colquhoun, et al., 2022) as provided on the web platform MinView (GSNSW, 2024), indicates geology of the Site consists of the following Quaternary sedimentary units: • Estuarine interbarrier creek deposits – this unit is mapped along the western margin of the IA. Unit lithology is described as fine- to medium-grained lithic-carbonate-quartz sand (marine-deposited), silt, clay, organic mud, peat, gravel, shell material. • Coastal beach ridge deposits – mapping indicates this unit occurs across much of the IA. Unit lithology consists of fine- to coarse-grained quartz-lithic-carbonate sand (marine-deposited), shell and shell-fragment-rich beds, polymictic gravel. • Coastal dune deposits – mapping indicates this unit occurs within the central eastern to north eastern corner of the IA. Unit lithology consists of marine-deposited and aeolian-reworked coastal sand dunes.
Soil landscape	The eSPADE (NSW DPE, 2024) platform indicates soil landscapes are mapped within the IA: • Bobangar Soil Landscape – is mapped across much of the east of the IA. Soils consist of deep (>300 cm), very disturbed Podzols and Siliceous Sands. • Cobaki (Variant a) Soil Landscape – is mapped across the western part of the IA. Soils consist of deep (>200 cm), poorly drained Humic Gleys on the plain; deep (>300 cm), poorly drained Humic Gleys and Acid Peats on very low-lying areas; Podzols and sands overlying Humic Gleys in interbarrier stream alluvial plains. eSPADE record indicates soil cation exchange capacity (CEC) of the upper 2.0 m of soil ranges between ≤5 and 10 cmolc/kg, while pH values range between pH 4 and pH 5.
Acid sulfate soils	eSPADE ASS risk mapping indicates the IA is mapped as having low probability of ASS occurrence 1- 3 m below ground surface, with ASS at an elevation of 2 - 4 mAHD. ASS risk mapping associated with the Tweed Local Environmental Plan 2014 indicates the IA is mapped as Class 3 ASS risk (any works <1 m below natural ground surface and where the watertable is likely to be lowered below 1 mBGL).
Surface hydrology	Drainage is likely to occur by a combination of direct soil infiltration (where permeability allows) and overland flow in localised paved areas. Drainage in hardstand areas is likely to be directed to stormwater infrastructure that drains either to the municipal stormwater system or Cudgera Creek.
Nearest surface waterbodies	• Cudgera Creek, 35 m west. • South Coral Sea, 250 m east.

2.3 Hydrogeology and Groundwater Use

2.3.1 Hydrogeological Setting

Available hydrogeological information is summarised below in Table 3.

Table 3: Hydrogeological information

Item	Details
Aquifer type	The Bureau of Meteorology (BoM) Australian Groundwater Insight database (BoM, 2024) indicates the principal hydrogeology of the Hastings Point area of consists of porous, extensive aquifers of high productivity. An upper aquifer exists in coastal sediments and a lower aquifer is present in sedimentary rock units.
Depth to groundwater	• 0.7 to 3.9 mBGL (Coffey Geosciences, 2005) • 3.25 to 3.63 mBGL (HEC, 2006)
Hydraulic conductivity	0.23 – 4.19 m/day (MA, 2024b)
Groundwater salinity	• Total dissolved solids (TDS) <3,000 mg/L, indicating non saline groundwater (BoM, 2024). • 289 to 386 µS/cm (HEC, 2006), indicating non-saline groundwater.
Groundwater pH	pH 4.0 to pH 5.0 (HEC, 2006), indicating very strongly to extremely acid groundwater conditions.
Groundwater flow direction (calculated)	North west, towards Cudgera Creek (MA, 2024b).

2.3.2 Groundwater Use

The WaterNSW Real-time Water Database was reviewed to identify local groundwater bores and uses ≤500 m of the IA. A summary of available bore records is provided in Table 4. A map of surrounding groundwater bores and their records is provided in Appendix C.

Table 4: Summary of groundwater bore records

Groundwater Bore	Direction (and Distance)	Depth to Groundwater (mBGL)	Registered Use	Water-bearing Zone Information
GW306499	Onsite	3.50	Monitoring	Sand – 3.5 to 4.5 mBGL Yield – unknown Salinity - unknown
GW307634	45 m, east	3.595	Monitoring	Sand – 3.5 to 6.0 mBGL Yield – unknown Salinity - unknown
GW307635	45 m, south east	5.475	Monitoring	Sand – 1.4 to 6.0 mBGL Yield – unknown Salinity - unknown
GW307637	15 m, east	3.51	Monitoring	Sand – 1.5 to 6.0 mBGL Yield – unknown Salinity - unknown

Groundwater Bore	Direction (and Distance)	Depth to Groundwater (mBGL)	Registered Use	Water-bearing Zone Information
GW307638	15 m, east	4.515	Monitoring	Sand – 2.1 to 6.0 mBGL Yield – unknown Salinity - unknown
GW303832	370 m, north	5.20	Domestic	Sand – 5.8 to 6.40 mBGL Yield – 0.4 L/sec Salinity - unknown

Beneficial groundwater extraction was not identified within the IA, but extraction for domestic purposes does occur on land to the north of the IA. Though groundwater is of likely potable quality it is expected the development will be serviced by a reticulated water supply and potential beneficial groundwater use in the IA is unlikely. Given the likely potable quality of groundwater the underlying aquifer may represent a potential future beneficial groundwater resource.

As previously discussed in the PSI (MA, 2024a), MA have also been conducting a hydrogeological assessment at the Site. As part of the hydrogeological assessment nine onsite groundwater monitoring wells were previously installed by in October 2022. Groundwater levels have been continually monitored at the Site since November 2022, with recorded groundwater levels ranging between 1.32 mAHD and 3.28 mAHD.

3 Previous Site Investigations

For the preparation of this DSI, MA have reviewed several previous environmental reports completed at the Site. From the review of these documents, relevant information has been considered for DSI planning including, development of the investigation CSM (Section 4) and preparation of a Sampling, Analysis and Quality Plan (SAQP) (Section 5). The previous environmental reports reviewed for the investigation included:

- Coffey Geosciences (2005) Proposed Retirement and Aged Care Development – Preliminary Geotechnical and Site Contamination Assessment, South Coast Road, Hastings Point.
- HMC Environmental Consulting (2006) Preliminary Site Investigation – Site History, 79-87 Tweed Coast Road, Hastings Point NSW.
- Cavvanba Consulting (2010) Site Audit Report 0103 – 0802, 87 89 Coast Road, Hastings Point NSW 2489.
- ENV Solutions (2020) Acid Sulfate Soil Management Plan and Radioactive Sands Assessment, Staged Seniors Living Development, 87-89 Tweed Coast Road, Hastings Point.
- MA (2024a) Preliminary Site Investigation, 87-89 Tweed Coast Road, Hastings Point NSW.

A summary of the key findings of the PSI report prepared by MA (2024a) is provided below in Table 5. A summary of the key findings of Coffey Geosciences (2005), HMC Environmental Consulting (2006), Cavvanba Consulting (2010), and ENV Solutions (2020) reports have been previously documented in the MA (2024a) PSI report and are not reproduced in this report.

Table 5: Summary of MA (2024a) PSI report findings

Item	Details
Investigation scope of works	The scope of works included: • Review of available online mapping resources. • Review of available online hydrogeological and groundwater information. • A desktop study, including review of historical aerial photography, historical Council records, information available on relevant regulatory and government databases, and previous environmental investigations completed for the IA and surrounding area. • Inspection of the IA to confirm desktop study findings and make observations of land use and activities on the IA and surrounding land. • Preparation of a PSI report.

Item	Details
PSI findings	• The IA was undeveloped until the 1960s when heavy mineral sand (rutile and zircon) mining began within the IA and surrounding land. • Sand mining ceased by the early 1970s and the land was rehabilitated. The source of material used for land restoration is unknown, and possible incidental landfilling remains unaccounted for during these activities. • By the 1980s caravan or mobile home structures and structures in the north of the IA had been erected on the IA. However, by 2023, most structures had been demolished or removed from the IA. • A telephone exchange and service station were established to the south east of the IA in the late 1980s, with the service station site being sold to Shell in 1988. Records indicate that the service station site has been reported to NSW EPA under Section 60 of the *Contaminated Land Management Act 1997* (CLM Act 1997) as potentially contaminated, but regulation under the CLM Act 1997 has been determined to be not required. • The IA currently consists of undeveloped open space, with no permanent structures present.
Potential contamination sources	The following potential sources of contamination were identified: • Imported fill, previously used during previous construction / development phases and sand mine reclamation. • Former heavy mineral sand mining area and associated activities. • Uncontrolled demolition of former buildings and structures, including incidental pesticide application. • Fuel / oil leaks and limited spills in long standing vehicle parking areas. • Offsite contamination sources relating to the neighbouring service station and telephone exchange facility.
Conceptual site model	The CSM developed by the PSI identified several media (soil, groundwater, indoor and ambient air, and surface water) that could be affected by COPC from AECs. Based on the *source – exposure pathway – receptor* linkages detailed by the CSM, the potential contamination sources, or AECs, could pose risks to human health and ecological receptors associated with the proposed development scenario land use and on adjacent land.
Conclusions and recommendations	The PSI concluded that potential sources of land contamination could pose risks to human health and ecological receptors. As a result, further characterisation by completion of a detailed site investigation (DSI) was recommended to quantify COPC in media identified by the CSM, and understand potential risks to receptors. An adequate program of field investigation, sampling, and laboratory analysis of soil and groundwater was recommended.

4 Conceptual Site Model

4.1 Areas of Environmental Concern

An assessment of potential areas of environmental concern (AEC) and contaminants of potential concern (COPC) has been made for the IA based on previous investigations at the Site), and desktop study findings and site inspection observations detailed by MA (2024). The outcome of this appraisal is provided in Table 6.

Table 6: Potential contamination sources and contaminants of potential concern

AEC	Potential for Contamination	COPC
AEC A Fill materials (including stockpiles)	The importation of fill material during previous phases of construction / development or sand mine reclamation has likely occurred to achieve design levels. This is of particular significance if filling material was sourced from locations of heavy industry, is a by-product of industrial processes, or includes demolition debris contaminated with asbestos containing materials (ACM).	Heavy metals (HM), total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylenes, and naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAH), organochlorine pesticides (OCP), organophosphorus pesticides (OPP), polychlorinated biphenyls (PCB), and asbestos
AEC B Former buildings and structures	Potential contamination may occur in areas of the IA from uncontrolled demolition of historic structures, particularly whereby hazardous building materials (asbestos containing materials (ACM), lead-based paint) associated with demolition debris may have been deposited in surface or near surface soils. Pesticides may have also been applied to surface soils in the historical period beneath former structures for pest and termite control purposes.	HM, OCP, OPP, PCB, asbestos
AEC C Vehicle parking	Due to the unsealed nature of the IA, potential localised contamination may exist within surface soils as a result of fuel / oil leaks and limited spills from long standing vehicle parking across the IA.	HM, TRH, BTEXN, PAH, phenolic compounds
AEC D Potential offsite sources – service station & telephone exchange	Offsite contamination sources identified relate to the neighbouring service station and telephone exchange facility. Due to the proximity and inferred hydraulically up-gradient location of these offsite locations, it is possible for local groundwater contamination to exist within the IA. Furthermore, should groundwater be impacted by VOCs, groundwater may be a potential vapour source.	HM, TRH, BTEXN, PAH, volatile organic compounds (VOC)

4.1.1 Historical Heavy Mineral Sand Minning

As noted in the MA (2024a) PSI, the IA and surrounding land have been previously mined for heavy mineral sand. Potential radiation risk associated with former mining activities has been assess for the IA (and surrounding land) in a number of different reports including a Site Audit Statement (SAS) prepared in 2010 by Cavvanba Consulting Pty Ltd (Cavvanba, 2010) and a more recent investigation by ENV Solutions (2020). Previous assessment and reporting generally determined that radiation risk at the site from former mining activities is considered to be low.

It is noted that a detailed review of previous radiation assessments completed for the IA was beyond the scope of works for this DSI.

4.2 Source - Exposure Pathway – Receptor Linkages

The *source – exposure pathway – receptor* linkages of the CSM established for investigation of the Site are presented in Table 7.

Table 7: Summary of conceptual site model *source – exposure pathway – receptor* linkages

Item	Description
Media affected by AECs and mechanism of contamination	**Soil** is considered a media of interest due to the identification of several potential sources of contamination at the Site. Mechanisms of contamination likely coincide with the following: • Fill contamination may be dispersed or localised and influenced by the fill source(s) and method of placement, resulting in potential contamination at all levels of fill and natural soil. • Contamination in other AECs is likely to be locally / spatially constrained and originate at the near surface. Potential 'top-down' impacts are likely to be influenced the volume of any releases and leachability or mobility of contamination in subsurface soils. Surface, near surface, and deeper soils (including natural soils) are plausible locations for contamination. **Groundwater** is a media of interest due to potential subsurface releases from offsite contamination sources (service station and telephone exchange) located south east of the IA. Potential groundwater contamination is likely to relate to the age and magnitude of any subsurface releases, prevailing hydrogeological conditions, and contaminant fate and transport in groundwater. Phase separation of volatile organic contaminants in groundwater could also result in potential vapour migration into buildings and structures, resulting in development of hazardous atmospheres.
Potential exposure pathways	*Human health* • Ingestion • Dermal contact and absorption • Inhalation (dusts, vapours, ground gases) • External radiation • Primary and secondary contact *Ecological* • Biota uptake and intake

Item	Description
Potential receptors	*Human health* • Residential users (and visitors) • Commercial workers • Basement users (within and beyond IA) • Maintenance workers (including intrusive soil workers) • Construction workers • Primary and secondary contact (groundwater and recreational water use) *Ecological* • Planting and landscaping areas (proposed development area) • Cudgera Creek biota (including riparian areas and wetlands)

5 Sampling, Analysis and Quality Plan

A Sampling, Analysis and Quality Plan (SAQP) was developed to ensure that limited sampling data collected for this PSI is representative and provides a robust basis for site assessment decisions. The SAQP has been prepared in general accordance with NEPC (2013b) methodology, and includes:

- Data quality objectives (DQO).
- Data quality indicators (DQI).
- Sampling methodologies and procedures.
- Field screening methods.
- Sample handling, preservation, and storage procedures.
- Analytical QA/QC.

The SAQP is summarised in the following subsections.

5.1 Data Quality Objectives

DQOs for the investigation are prepared as statements specifying the qualitative and quantitative data required to support project decisions. DQOs have been prepared in general accordance with NEPC (2013b) and NSW EPA (2020, 2022), and are presented below in Table 8.

Table 8: Data quality objectives

Item	Description
Step 1 Stating the problem	The DSI is being undertaken to evaluated land contamination, as required to support a SSDA to NSW DPE for proposed development of the IA. It is understood that the current proposal will likely result in a land use scenario associated with residential (with soil access) use due to aged care facility use of the land. The CSM provided in Section 4 outlines potential *source - exposure pathway – receptor* linkages that may exist at the Site and result in receptor exposure under the proposed development land use setting. As such, a program of soil and groundwater sampling and laboratory analysis has been proposed to screen for COPCs in media (see Section 4.1) as detailed by MA (2024). Investigation of radiological risks will be completed separately to the DSI. Any requirements for further investigation and / or remediation will be established from the findings of investigation and sampling completed for the DSI.

Item	Description
Step 2 Identifying the decision(s)	The decisions required to be made for the DSI will be based on the following questions: • Is the environmental data collected for the project of suitable quality to evaluate relevant land contamination exposure risks? • Are impacts from previous or current Site use(s) present in media which could pose risks to human health or the environment during the proposed use of the IA? • Does the IA require further investigation, remediation, or management before media can be considered suitable for the proposed development land use?
Step 3 Identifying inputs to the decision	The inputs to the assessment include: • Proposed land uses of the proposed development. • The CSM developed for the investigation. • The sampling design employed to screen for potential risks posed by media (soil, groundwater). • Samples collected from respective media sampling points. • Observations made during intrusive investigation and sample collection. • The measured physical and / or chemical parameters obtained from soil and groundwater (including field data and laboratory analytical results, where relevant). • Tier 1 assessment criteria adopted for the appraisal of potential contamination risks posed by soil and groundwater media.
Step 4 Defining study boundaries	The boundaries of the study are as follows: • Lateral - defined by the IA boundary (shown in Appendix A) and the investigation sampling points used for sample collection to screen soil and groundwater COPCs. • Vertical – limited to fill and natural soil sampling units at each test locations and samples collected from water bearing zones at groundwater monitoring well locations. • Temporal – data collected during the investigation relates specifically to the date of sampling, and the ability to access sampling locations in the IA during field investigation. • Constraints which may affect field investigation and sampling, include access limitations for investigation plant, equipment, and field personnel, weather conditions, presence of above and below ground services / infrastructure, and hazards creating work health and safety risks to field personnel.
Step 5 Developing decision rules	The decision rules for this investigation are as follows: • The maximum soil concentration for each respective COPC will be the key statistical parameter of interest. Data evaluation will also consider: - The 95% upper confidence limit (UCL) of the sample arithmetic mean ($\bar{x}$) to be <COPC criteria. - The sample standard deviation – to be <50% COPC criteria. - No individual sample concentrations >250% of COPC criteria. • The maximum groundwater concentration for each respective COPC will be the key statistical parameter of interest. If the maximum concentration of a respective COPC exceeds the adopted assessment criteria (Section 5.3) further investigation or remediation will be required.

Item	Description
Step 6 Specifying limits on decision errors	Specific limits for this project will be in accordance with National and NSW EPA guidance, appropriate indicators of data quality, and standard procedures adopted for field sampling and handling. The hypotheses for the soil investigation are: • *The null hypothesis* - the maximum soil concentration of the COPC is >assessment criteria and soil is contaminated. • *The alternative hypothesis* – the maximum soil concentration of the COPC is ≤ assessment criteria and soil is not contaminated. The hypotheses for groundwater investigation are: • *The null hypothesis* is that the maximum COPC concentration is > assessment criteria and groundwater is contamination. • *The alternative hypothesis* is that the maximum COPC groundwater concentration is ≤ assessment criteria and groundwater is not contaminated.
Step 7 Optimising sampling design	A pattern of systematic sampling has been selected to screen soils for COPCs due to the likelihood of diffuse contamination in the IA. Grid based sampling requirements of NSW EPA (2022) for an area of approximately 21,300 m^2 will be adopted, requiring a minimum of thirty-one sampling locations. This will include: • Soil investigation by the methods discussed in Section 5.4. • Field samples will consist of an upper soil profile sample (including fill soils) at each sampling location, with additional field samples collected from deeper fill soil (including natural soil) layers. • Analytical sample selection for laboratory testing will be based on soil units encountered at sampling locations and field observations made (including visual and olfactory evidence). One sample will be analysed per location (total 31 samples). • Analytical samples will be tested for COPC identified by the CSM (Section 4) to assess the environmental condition of soils associated with the recognised AECs. Groundwater investigation will consist of the following: • Investigation via the methodology discussed in Section 5.4.2. • Collection of groundwater samples from four newly installed groundwater monitoring wells. • Analysis of samples for COPC identified by the CSM (Section 4) to assess groundwater quality.

5.2 Data Quality Indicators

In accordance with NSW EPA (2017), the field and laboratory data set obtained for the investigation will be compared with the DQI outlined in Table 9 to ensure that acquired data meets the needs of the project and that DQO have been met.

Table 9: Data quality indicators

Assessment Measure (DQI)	Comment
Precision – A measure of the variability (or reproducibility) of data.	Precision will be assessed by reviewing blind field duplicate samples collected from discrete samples through the calculation of the relative percent difference (RPD). Data precision is deemed acceptable where results are: • Any RPD (for 0 - 10 x EQL), or • RPD <50% (for 10 - 30 x EQL) or • RPD <30% (for >30 x EQL) Exceedance of this range may still be considered acceptable where heterogeneous materials are sampled.
Accuracy – A measure of the closeness of reported data to the "true value."	Data accuracy will be assessed by: • Field spikes and blanks. • Laboratory duplicate samples.
Representativeness – Confidence that data is representative of each media present on the site.	To ensure data representativeness, the following field and laboratory procedures will be followed: • Design and implementation of the sampling program completed in accordance with MA standard operating procedures (SOP). • Use of trip blank and trip spike samples for assessing volatile losses during field sampling and to ensure no cross contamination or laboratory artefacts. • Laboratory hold times are met, and sample handling and transportation is completed in accordance with the SAQP.
Completeness – A measure of the amount of usable data from a data collection activity.	To ensure data set completeness, the following is required: • Confirmation that the sampling methodology was completed in general accordance with the SAQP. • Provision of COC and sample receipt forms. • Provision of results from all laboratory QA/QC samples (lab blanks, trip blank and trip spike, lab duplicates). • NATA accreditation stamp on all laboratory reports.
Comparability – Confidence that data may be considered to be equivalent for each sampling and analytical event.	Data comparability was maintained by ensuring that: • All site sampling events are undertaken following methodologies outlined in the MA SOP, SAQP, and published guidelines. • NATA accredited laboratory methodologies are followed for all laboratory analysis.

5.3 Site Assessment Criteria

Site assessment criteria (SAC) adopted for the characterisation of soil and groundwater for the DSI are summarised in Table 10.

Table 10: Site assessment criteria

Media	Adopted Guidelines	Applicability
Soil	NEPC (2013a), HEPA (2020), CRC CARE (2010)	Health investigation levels (HIL) Samples are assessed against: • NEPC (2013a) HIL-A investigation levels for residential (with soil access) land use. Health screening levels (HSL) *Petroleum hydrocarbons* Samples are assessed against: • NEPC (2013a) HSL-A&B – low to high density residential land use (sand dominant soils) for vapour intrusion are also considered. *Asbestos* Asbestos HSL outlined in NEPC (2013a) have not been adopted for this investigation. Alternatively, presence of asbestos in soils, or in material samples, is assessed on a detect / non detect basis. Ecological Investigation Levels (EIL) EILs for select metals, DDT, and naphthalene are derived from NEPC (2013a) for protection of terrestrial ecosystems in residential & public open space. EILs are calculated using Added Contaminant Levels (ACL) for respective contaminants in NEPC (2013a) using the most conservative pH, CEC, clay content values, and Ambient Background Concentrations (ABC) are derived from NSW - old suburb / low traffic ABCs, tabulated in NEPC (2013d). Contamination is also considered aged (>2 years). Soil parameters adopted for EIL calculations are based on compiled site-specific analytical data, where noted: • 1% clay content • CEC – 1 $cmol_c/kg$ (based on laboratory analysis, see Appendix H) • pH – pH 6.5 (based on laboratory analysis, see Appendix H) EIL calculation sheets are provided in Appendix K. Ecological Screening Levels (ESL) TRH and BTEX are assessed against ESLs for urban residential & public open space – coarse textured soils presented in NEPC (2013a). High reliability ecological guideline levels provided in Table 11 of CRC CARE (2017) have been adopted for benzo(α)pyrene (fresh), instead of low reliability ESLs values outlined in NEPC (2013a). Management Limits NEPC (2013a) management limits have been adopted for the petroleum hydrocarbons for residential / parkland – coarse textured soils.

Media	Adopted Guidelines	Applicability
Groundwater	ANZG (2018), NEPC (2013a), HEPA (2020), NHMRC & NRMMC (2022)	Groundwater Investigation Levels (GILs) for marine water ecosystems Marine water trigger values have been adopted as GILs for the assessment of risks to biota from groundwater, as the nearest surface water receptor, located hydraulically downgradient of the Site, Cudgera Creek, is considered an estuarine surface water environment. Health based Screening Levels (HSLs) As groundwater exists <2.0 m of the ground surface and will be in contact with the proposed development basement, NEPC (2013a) groundwater HSLs have not been adopted for assessment. Should substantial F1 TRH, F2 TRH and BTEXN concentrations be reported during the investigation, vapour assessment may be required to quantity potential groundwater vapour risks. Recreational Water GILs for Secondary Contact For a scenario where receptors may come into indirect contact with groundwater (i.e., exposure to groundwater seepage within the proposed basement, recreational use associated with surface waterbodies), NHMRC & NRMMC (2022) drinking water guideline values for human health (x 10) have been adopted for the assessment.

5.4 Investigation Methodology

5.4.1 Soil Investigation

The soil investigation and sampling methodology provided in Table 11 was completed to meet the project DQOs.

Table 11: Soil investigation and sampling methodology

Item	Description
Fieldworks	The soil investigation and sampling event was completed from 29 July to 1 August 2024.
Investigation methods	Systematic soil investigation was proposed at thirty-four test locations on an approximate 26 m sampling grid. Investigation methods consisted of thirty four test pit (TP101 to TP134) excavations completed at by mechanical six tonne excavator. Test pits were advanced through fill material to a minimum depth of 0.5 m into natural soils or prior refusal. TP101 and TP105 were excavated adjacent to minor observed stockpiles identified in the PSI (MA, 2024). Sampling locations are shown in Appendix A (Map 05).
Soil logging	Soils were classified in the field with respect to lithological characteristics and texture. Soil classifications and descriptions were generally based on the Unified Soil Classification System (USCS) and Australian Standard (AS) AS1726:2017 - *Geotechnical Site Investigations*. Soils were also evaluated qualitatively for odour, visual evidence of contamination, and anthropogenic inclusions. Test pit logs for the investigation are presented in Appendix D. A summary of soil descriptions and field observations is provided in Section 6.3.

Item	Description
Sampling	Soil sampling was completed by an experienced MA environmental consultant using a dedicated, clean pair of nitrile gloves for collection of each sample. Each sample obtained from test pit excavations was collected from soils located within the centre of the excavator bucket. Each sample was placed into a laboratory supplied, 250 mL glass jar, with no headspace (to limit volatile loss) and labelled with a unique sampling identification number.
VOC screening	Field screening for VOCs in soil was completed using calibrated photo-ionisation detector (PID) (Tiger PID). A small subsample was collected from each soil sample, placed into a zip-lock bag, agitated, with the bag then penetrated to measure the resulting VOC concentration. Sample VOC concentrations were recorded on test pit log sheets. PID calibration certificates are presented in Appendix E.
Decontamination procedures	Disposable sampling equipment was used for sample collection from test pit locations and decontamination procedures were therefore not employed.
Sample preservation	Soil samples were stored in a refrigerated (ice filled) chest, whilst onsite and in transit to the laboratory. All samples were submitted and analysed within the required holding period, as documented in laboratory sample receipt advice presented in Appendix I.
Quality control sampling	The following quality control (QC) samples were collected for the soil investigation: • Intra laboratory duplicate soil samples were collected for laboratory analysis at a rate 10%. • A laboratory prepared trip blank and trip spike were stored with collected soil samples in the field and during transportation to the analytical laboratory for each analysis sample batch. • Daily equipment rinsate samples were not collected as disposable sampling equipment was used for sample collection.
Sample handling and transport	Sample collection, storage and transport was conducted according with industry guidance and standards. Samples were placed immediately into an ice chilled cooler box following collection. Primary samples were dispatched to Envirolab Services Pty Ltd (Envirolab), a NATA accredited analytical laboratory, under chain of custody (COC) conditions for analysis. One duplicate sample was dispatched to ALS, a NATA accredited analytical laboratory, also under COC conditions, as an analytical check sample. COC certificates and laboratory sample receipt documentation was provided to MA for confirmation purposes and is attached in Appendix I.

5.4.2 Groundwater Investigation

The groundwater investigation and sampling methodology detailed in Table 12, was completed to meet the project DQO.

Table 12: Groundwater investigation methodology

Activity	Detail / Comments
Fieldwork	Groundwater monitoring wells (MW05, MW06, and MW09) previously installed and developed by MA were utilised for DSI groundwater assessment purposes. Monitoring installation and development was previous completed on the following dates: • MW5 - 18 October 2022

Activity	Detail / Comments
	• MW6 – 19 October 2022 • MW9 - 18 October 2022 A groundwater monitoring event (GME), including water level gauging, purging, field testing and sampling, was conducted on 1 August 2024. The groundwater monitoring well locations are shown in Appendix A (Map 05).
Monitoring well construction	Monitoring well construction was completed by the drilling of boreholes by a truck mounted, hydraulic drilling rig, fitted with100 mm diameter solid flight augers. Monitoring well construction was in general accordance with the standards described in NUDLC (2020), and involved the following: • 50 mm, Class 18 uPVC, threaded, machine slotted screen and casing, with slotted intervals in shallow wells set to screen to at least 500 mm above the standing water level for assessment of phase separated hydrocarbons (PSH), if present. • Base and top of well was sealed with a uPVC cap and torque plug, respectively. • Annular, graded sand filter was used to approximately 500 mm above top of screen interval. • Granular bentonite was applied above the annular filter to seal the screened interval. • Drill cuttings were used to backfill the bore annulus to just below ground level. • Surface completion comprised of a steel monument installed above the ground surface, and set with concrete. Monitoring well construction details are summarised in Table 16.
Monitoring well development	Monitoring well development was conducted directly following installation of each monitoring well. This involved flushing the well with fresh water to remove heavily sediment laden water, followed by agitation of the full length of the water column using a dedicated, HDPE foot valve, followed by removal of water with a pump (resulting in several well volumes removed from each well).
Well gauging	The monitoring well was gauged for standing water level (SWL) prior to purging at the commencement of the GME. Gauging was completed using a calibrated, oil water interface dip meter. SWL measurements are shown in Table 17. Field data sheets and the oil-water interface dip meter calibration certificate is provided in Appendix E. A transparent, disposable, HDPE bailer was used to visually assess for the presence of PSH prior to the commencement of well purging.
Well purging, field testing and sampling	Groundwater monitoring well purging and sampling by conducted by low flow method using a peristaltic pump (Geopump Series 2). The peristaltic pump system setup incorporated dedicated HDPE tubing, connected to dedicated silicon tubing. Purging rates were adjusted accordingly to regulate the extraction flow rate to avoid excessive water level drawdown during purging. Water quality field parameters were measured continuously during groundwater purging using a water quality meter (YSI Pro Plus) fitted within a closed flow through cell. Field parameters, including dissolved oxygen (DO), electrical conductivity (EC), reduction oxidation potential (redox), temperature, and pH, were monitored during the sampling until parameter stabilisation occurred. Odours, sheens, water clarity, and colour were evaluated during purging. Sampling was conducted following stabilisation of field parameters; which was defined by three consecutive parameter readings per the specified parameter ranges detailed below: • Temperature: ± 0.2°C • Electrical Conductivity: ± 3% of the read value • Redox: ± 20 mV

Activity	Detail / Comments
	• DO: ± 10% of the read value • pH: ± 0.2 pH unit The stabilised field parameters were recorded on the field data sheet, and are summarised in Table 17. Field data sheets and the water quality meter calibration certificate is provided in Appendix E.
Sample collection and preservation	Sample containers were supplied by the laboratory with the following preservatives: • One, 250 ml litre amber glass, acid washed and solvent rinsed bottle. • Two, 40 ml glass vials, with dilute hydrochloric acid 1 mL). • One, 250 mL, HDPE bottle, with dilute nitric acid (1 mL). Samples for metals analysis were filtered using 0.45 µm pore size filters upon receipt by the analytical laboratory. All containers were filled with sample to the brim, then capped and stored in ice filled chests until completion of fieldwork, and during sample transit to the analytical laboratory.
Decontamination procedure	Prior to, and between, sampling locations, the water interface probe was rinsed with potable water and air dried. Decontamination of the pump system was not required as new, dedicated HDPE and silicon tubing was used at each monitoring well, while a new HDPE bailer, stored and transported in its factory sealed, plastic sleeve, and dedicated to individual wells, was used. Decontamination of the field filtering system was not required as new, dedicated syringes and filters (0.45 µm pore size) were used for each dissolved metal sample.
Quality control sampling	The following quality control (QC) samples were collected for the soil investigation: • An intra laboratory duplicate sample was collected for laboratory analysis. • A laboratory prepared trip blank and trip spike were stored with groundwater samples in the field and during transportation to the analytical laboratory for each analysis sample batch. • An equipment rinsate sample was not collected due to the use of dedicated sampling equipment at each monitoring well location.
Sample identification, storage, and handling	Sampling containers were labelled with site specific nomenclature, including project number, sample location, and date. Samples were stored in a refrigerated (icebrick) cooler box and transported to Envirolab, a NATA accredited analytical laboratory, with accompanying chain of custody (COC) documentation and laboratory supplied security seals. Sample receipt advice (SRA) was provided by the laboratory, documenting sample conditions upon receipt at the laboratory. Copies of COC and SRA documents are presented in Appendix I.

5.5 Laboratory Analysis and Sampling Rationale

The selection of the laboratory analytical suite for the DSI was informed by the site history findings outlined in the PSI (MA, 2024a) (summarised in Section 3) and the data gaps identified during development of the CSM (Section 4) and DQO process (Section 5.1).

Sample analysis was completed by a NATA accredited analytical laboratory (Envirolab) in accordance with NEPC (2013c) *Schedule B3: Guideline on Laboratory Analysis of Potentially Contaminated Soils.* A summary of the media laboratory analytical suite used for the investigation is provided in Table 13.

Table 13: Summary of laboratory analyses of media for COPCs

COPC	Soil Samples	Groundwater Samples	QA/QC Samples Analysed
Heavy metals	31	3	2 intra laboratory duplicates – soil (Envirolab) 1 inter laboratory duplicate – soil (ALS) 1 duplicate – groundwater
BTEXN	31	3	1 trip spike – soil (BTEX only) 1 trip spike – groundwater (BTEX only)
TRH	31	3	1 trip blank – soil (TRH only) 1 trip blank – groundwater (vTRH only)
PAH	31	3	-
OCP / OPP	31	3	-
PCB	31	3	-
CEC	3	-	-
pH	3	-	-
Asbestos in soil	31	-	-

6 Field and Analytical Results

6.1 Investigation Constraints

The proposed scope of works (Section 1.4) for the investigation was largely completed, however, the following constraints were encountered:

- Due to various ground conditions (such as test pit collapse, underground services or obstructions in the fill profile), test pit locationsTP105, TP109, TP110 - TP113, TP115, TP116, TP127 – TP131 were terminated in fill material. As such, the depth to natural soil and maximum depth of filling could not be established at these locations.

6.2 Data Quality Assessment

Field and laboratory QA/QC has been reviewed for the investigation and is presented in the Data Quality Assessment provided Appendix F.

Assessment of the field and analytical data produced by the investigation indicated that data adequately satisfies the DQIs that were developed for the investigation. It is therefore concluded that the overall data quality is of an acceptable standard to be used for interpretation.

6.3 Subsurface Conditions and Field Observations

Fill material was observed at each test pit location and generally extended to depths between 1.0 to 1.7 mBGL within the IA.

Fill soils typically consisted of grey to dark grey, and brown to yellow brown silty sand to sand. Fill soils located within the northern parts of the IA also included orange to yellow brown sandy gravel and sandy gravelly clay to depths of 0.3 – 0.4 mBGL. Natural soils directly underlying fill consisted of brown to white or pale grey sand.

Groundwater seepage was encountered at several test pit locations during the investigation, ranging between 1.20 to 2.0 mBGL.

Evidence of potential odours and soil staining was not identified in soils at each test pit location. Anthropogenic materials were generally not observed in fill materials at test pit locations; however, glass fragments (TP130), timber (TP105 and TP115) and plastic (TP103 - TP105, TP107, TP110, TP115, TP116 and TP130) were reported in fill at some locations. Foreign natural materials, consisting of rock fragments, round to sub-round gravel and clay pieces were commonly encountered in fill material.

As noted in Table 11, TP101 and TP105 were excavated adjacent to minor soil stockpiles (<10m^3) identified in the PSI. No obvious signs of potential contamination were observed within stockpiled material.

Evidence of demolition debris or PACM was also not observed during examination of fill in excavated soils or during sample collection at each test pit.

PID screening of soils for VOCs were generally low and <5 ppm.

Test locations used for soil sampling are shown on the sampling plan in Appendix A (Map 05) and detailed test pit logs are provided in Appendix D. A selection of photographs obtained during the intrusive investigations are present in Appendix J.

6.4 Soil Results

6.4.1 Soil Analytical Results

A summary of laboratory analytical results for analysed soil samples, compared to adopted SAC, is provided in Table 14. A detailed tabulation of soil analytical results showing individual samples compared to adopted SAC is provided in Appendix G. Laboratory analytical documentation is available in Appendix H.

Table 14: Summary of soil analytical results compared to assessment criteria

Analyte	Results Compared to SAC
Heavy metals	Heavy metals were reported at concentrations in analysed samples either below LOR or below adopted SAC with the exception of: **Copper in sample TP130/0.1 – 0.2 (75 mg/kg)** which exceeded the site specific EIL of 35 mg/kg.
BTEXN	BTEXN was reported in soil samples by the laboratory at concentrations below LOR and below adopted SAC.
TRH	TRHs concentrations were reported by the laboratory in soil samples at levels below LOR and below adopted SAC.
PAH	Concentrations of relevant PAHs were reported in analysed soil samples at levels below LOR and below adopted SAC.
OCP/OPP	Concentrations of OCP and OPP in analysed soil samples were reported below LOR and below the respective SAC.
PCB (total)	PCB (total) was reported in analysed soil samples by the laboratory at concentrations below LOR and below the adopted SAC.
Asbestos (identification in soil)	The analytical laboratory reported that no asbestos was detected at the reporting limit of 0.1 g/kg in analysed soils samples. Trace analysis by the laboratory did not detect asbestos in soil samples.

6.4.2 Statistical Analysis – UCL calculations

Statistical analysis was completed for analytes which exceeded the adopted SAC. Analysis was completed using Pro UCL 5.2 software with calculation sheets provided in Appendix L.

6.4.2.1 Copper

Statistical analysis of copper concentrations has been completed to assess the significance of the identified EIL exceedance. A 95% upper confidence limit (UCL) calculation has been completed using copper concentration data from site fill material.

The outcomes of the completed statistical analysis are considered to represent a suitable line of evidence in assessing potential ecological contamination risks associated with copper concentrations within IA soil. A summary of the statistical analysis is provided in Table 15.

Table 15: Statistical analysis of lead concentration in fill material.

COPC	No Samples	SAC (mg/kg)	Max. Conc. (mg/kg)	Median (mg/kg)	Mean (mg/kg)	SD (mg/kg)	PQL (mg/kg)	95% UCL $\overline{x}$ (mg/kg)
Copper	31	35 (EIL)	75	8	10.26	13.88	1	14.6

Note

1. 95% Student's-t UCL.

The following comments are made based on statistical analysis:

- The maximum concentration of coper is within 250% percent of the adopted EIL / SAC and is therefore not considered to be a 'hot spot' with reference to NEPM (2013).
- Statistical analysis of copper concentration in data from IA soils indicates the 95% UCL $\bar{x}$ concentration is less than the respective EIL / SAC concentration.
- Additionally, statistical data indicated the SD for coper concentrations to be <50%, of the adopted EIL / SAC.

6.5 Groundwater Results

6.5.1 Groundwater Monitoring Well Construction Details

A summary of groundwater monitoring well construction details for monitoring wells MW05, MW06, and MW09 is provided in Table 16 . Detailed groundwater monitoring well construction logs are provided in Appendix D.

Table 16: Groundwater monitoring well construction details

MW Identification	Ground Level (mAHD)	RL TOC (mAHD)	Total Well Depth (mBGL)	Screening Interval (mBGL)	Screening Interval Lithology
MW05	3.91	4.60	4.50	1.50 – 4.50	Silty sand to sand
MW06	4.47	5.20	5.00	2.00 – 5.00	Sand
MW09	5.69	6.48	6.00	3.00 – 6.00	Sand

Notes:

1. mAHD – metres Australian Height Datum.
2. RL TOC – Reduced level top of casing. Calculated by adding the length of solid uPVC pipe stickup to surveyed ground level at monitoring well location.
3. mBGL – metres below ground level.

6.5.2 Groundwater Field Parameters

A GME was conducted at MW05, MW06 and MW09 on 1 August 2024. Standing water levels (SWLs) were measured prior to purging and recorded with stabilised field parameters onto field data sheets. GME field data sheets are provided in Appendix E.

A summary of GME field data, including stabilised groundwater parameters, is presented in Table 17.

Table 17: Summary of groundwater field parameters

Well ID	SWL[1] (mBTOC)[2]	SWL (mAHD)[3]	DO[4] (mg/L)	Field pH	Field EC[5] (µS/cm)	Temp (°C)	Eh (mV)[6]	Observations
MW05	2.02	1.33	0.46	5.13	152	20.2	113.7	No odour or sheen, colourless and transparent
MW06	2.82	2.09	4.95	5.56	109.9	20.8	-88.5	No odour or sheen, colourless and transparent
MW09	3.68	2.89	0.45	5.89	103.6	21.1	-7.6a	No odour or sheen, colourless and transparent

Notes:

1. SWL – Standing water level
2. mBTOC – metres below top of casing
3. mAHD – metres Australian Height Datum
4. DO – Dissolved oxygen, measured in milligrams per litre (mg/L)
5. EC – Electrical conductivity, measured in micro siemens/centimetre (µS/cm)
6. Eh – Redox potential measured in millivolts (mV). Ag:Ag chloride probe has been corrected by +202 mV for calculation of Eh.

Groundwater field parameters outlined in Table 17 indicate groundwater is strongly to moderately acidic, oxidising, and fresh (in terms of salinity).

6.5.3 Calculated Groundwater Flow Direction

As outlined in Table 3, groundwater flow direction has been calculated to be north westerly. Groundwater flow contours and groundwater flow direction are presented diagrammatically in Appendix A (Map 06).

6.5.4 Groundwater Analytical Results

A summary of groundwater analytical results for samples collected, and compared to adopted GILs, is provided in Table 18. Tabulated groundwater analytical results showing contaminant concentrations compared to adopted GILs is provided in Appendix G. Laboratory analytical documentation is provided in Appendix H.

Table 18: Summary of groundwater analytical results compared to groundwater assessment criteria

Analyte	Results Compared to SAC
Heavy metals	Laboratory analytical results for metals were reported either below LOR or below adopted GILs at monitoring well locations, except for the following: • Chromium (total) concentrations in MW5 (0.0044 mg/L), MW6 (0.005 mg/L), and MW9 (0.008 mg/L) exceeded the ANZG (2018) criteria for Cr (VI) (0.0044 mg/L). • Copper concentrations in MW5 (0.003 mg/L), MW6 (0.004 mg/L), and MW9 (0.006 mg/L) exceeded the ANZG (2018) criteria (0.0013 mg/L). • Zinc concentrations in MW6 (0.012 mg/L) and MW9 (0.018 mg/L) exceeded ANZG (2018) criteria (0.008 mg/L).
BTEXN / TRH	Laboratory analytical results for TRH and BTEXN were reported below LOR and adopted GILs at monitoring well location.
PAH	Laboratory analytical results for PAHs were reported below LOR and adopted GILs at monitoring well locations.
OCP, OPP and PCB	Laboratory analytical results for OCP, OPP and PCB were reported below LOR and adopted GILs at monitoring well locations.

7 Discussion

7.1 Soils

The soil sampling program identified low concentrations of metals and organic contaminants (PAHs, pesticides, BTEXN, TRHs, and PCBs) in targeted fill soils at the Site. Contaminant concentrations in fill were reported either <LOR or below adopted SAC (human health and ecological criteria, management limits). As such, the overall chemical data indicated fill soils are unlikely to be significantly contaminated by past activities and land use within the IA.

Observations made at test locations identified trace quantities of anthropogenic material in fill soils. Asbestos analysis of selected fill samples by the laboratory did not identify the presence of asbestos, and evidence of significant demolition materials (i.e., brick, tile, concrete, plasterboard, etc.) or PACM was not reported in examined fill spoil and during fill sample collection.

7.2 Groundwater

Groundwater reported at monitoring wells was strongly to moderately acidic and fresh (non-saline), with typically low concentrations of dissolved metals, some marginally exceeding ecological GILs, with organic contaminants below LOR and GILs. Background groundwater quality entering the IA, and captured by MW9, reported concentrations of metals and organics that were consistent with levels reported at MW5 and MW6. Additionally, the sampling data from MW9 did not identify organics / petroleum hydrocarbons entering the IA from the service station located hydraulically upgradient of the IA.

Given that beneficial groundwater use is not proposed for the development, and the basement will be fully tanked, ongoing risk to sensitive receptors or the development posed by groundwater, is expected to be low based on current data. It is noted that temporary dewatering will likely be required during excavation for the construction of the proposed basement. To address potential risks during temporary dewatering, a groundwater dewatering management plan is to be prepared, outlining requirements for dewatering during the construction phase of the development.

7.3 Conceptual Site Model Revision

The findings of the investigation did not identify evidence of soil or groundwater contamination at levels likely to pose risks to human health and ecological receptors associated with the proposed seniors living development within the IA. The investigation also did not establish the presence of *potential source – exposure pathway – receptor* linkages associated with soil and groundwater media within recognised AECs assessed as part of this DSI.

8 Conclusions

This DSI has been completed in accordance with DUAP (1998) to evaluate potential land contamination that may pose risks to receptors associated with proposed development of the IA at 87-89 Tweed Coast Road, Hastings Point NSW. MA understand the proposed senior living development of the IA constitutes residential (with soil access) land use.

A program of soil and groundwater sampling was undertaken to assess AEC identified in the CSM (Section 4). The findings of the sampling program indicate that potential risks to human health and ecological receptors are generally low, and are summarised as follows:

- Soil investigations found concentrations of metals and organic contaminants below adopted SAC within the IA. Asbestos was also not observed at test locations or reported by the laboratory in analysed samples.
- Groundwater at the Site was found to contain low concentrations of metals, with some slightly exceeding GILs, and non detectable levels of organics, which were below adopted GILs. Slightly elevated metals reported in groundwater were considered indicative of background groundwater quality, while evidence of petroleum hydrocarbons entering the IA in groundwater from the upgradient service station site was not identified. Groundwater was not expected to pose long term risks to the development and receptors, as no beneficial use of groundwater is proposed and the development basement will be tanked.

Based on investigation findings and the CSM developed for this assessment, risks to future human health and ecological receptors, as well as risk to the development is generally considered low, subject to the preparation of:

- Construction Environmental Management Plan (CEMP) for the construction phase of the project. The CEMP is to include protocols to address any unexpected finds which may be encountered during future excavation and earthworks.
- Preparation of a formal waste classification in accordance with NSW EPA (2014) *Waste Classification Guidelines* to facilitate the offsite disposal of soil as part of basement (or other) excavation works.
- A groundwater dewatering management plan to address potential groundwater risks during the temporary extraction of groundwater during the construction phase of the development.

In conclusion, MA considers that the IA is suitable for the proposed seniors living development and satisfies S4.6 of *State Environmental Planning Policy (Resilience and Hazards) 2021*. This report provides the consent authority with data and analysis sufficient to consider whether the land is contaminated [s 4.6 (1) (a)] and to conclude that the land is suitable for the intended use without the need for remediation or ongoing management considerations with regards to contaminated land.

9 Limitations Statement

This DSI was undertaken in line with current industry standards.

It is important, however, to note that no land contamination study can be a complete and exhaustive characterisation of a site, nor can it be guaranteed that any assessment shall identify and characterise all areas of potential contamination or all past potentially contaminating land uses. Therefore, this report should not be read as a guarantee that no contamination shall be found on the Site. Should material be exposed in future which appears to be contaminated or inconsistent with natural site soils, additional testing may be required to determine the implications for the site.

Martens & Associates Pty Ltd has undertaken this assessment for the purposes of the current development proposal. No reliance on this report should be made for any other investigation or proposal. Martens & Associates Pty Ltd accepts no responsibility and provides no guarantee regarding the characteristics of areas of the site not specifically studied in this investigation.

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Appendix A – Maps

0 30 60 90 120 150 m

1:2500 @ A3

Viewport A

Notes:
- Aerial from Nearmap (2024).
- Cadastre from NSW Clip & Ship (2024).

martens
Environment | Water | Geotechnics | Civil | Projects

Map Title / Figure:
Site Location Plan

Map 02	Map
87-89 Tweed Coast Road, Hastings Point NSW 2489	Site
Proposed Seniors Housing Development	Project
Detailed Site Investigation	Sub-Project
TriCare (Hastings) Limited	Client
15/08/2024	Date

Project No: P2108580 Map Set: MS05-R01 EPSG: 7856

Project No: P2108580 Map Set: MS05-R01 EPSG: 7856

0 90 180 270 360 450 m

1:7500 @ A3

Viewport

Notes:
- Aerial from Nearmap (2024).
- Cadastre from NSW Clip & Ship (2024).
- Contours from Elvis Lidar (2013).

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Map Title / Figure:
Topography

Map 03	Map
87-89 Tweed Coast Road, Hastings Point NSW 2489	Site
Proposed Seniors Housing Development	Project
Detailed Site Investigation	Sub-Project
TriCare (Hastings) Limited	Client
15/08/2024	Date

Project No: P2108580 Map Set: MS05-R01 EPSG: 7856

0 30 60 90 120 150 m

1:2500 @ A3

Viewport A

Notes:
- Aerial from Nearmap (2024).
- Cadastre from NSW Clip & Ship (2024).

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Map Title / Figure:

Areas of Environmental Concern

Map 04	Map
87-89 Tweed Coast Road, Hastings Point NSW 2489	Site
Proposed Seniors Housing Development	Project
Detailed Site Investigation	Sub-Project
TriCare (Hastings) Limited	Client
15/08/2024	Date

Legend

- Investigation Area
- Cadastre
- Test Pit (TP) locations
- Monitoring Well (MW) locations

TP127 TP126 TP124 TP125 TP123 TP128 TP129 TP131 TP118 TP122 TP121 TP119 TP130 TP120 TP132 TP116 TP117 MW6 TP115 TP133 TP134 TP114 TP113 TP106 TP107 TP112 TP111 TP108 TP105 TP109 TP110 TP104 MW5 TP103 TP102 TP101 MW9 MW10

TWEED COAST ROAD

N

0 10 20 30 40 50 m

1:1250 @ A3

Viewport B

Notes:
- Aerial from Nearmap (2024).
- Cadastre from NSW Clip & Ship (2024).

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Map Title / Figure:

DSI Sampling Plan

Map 05	Map
87-89 Tweed Coast Road, Hastings Point NSW 2489	Site
Proposed Seniors Housing Development	Project
Detailed Site Investigation	Sub-Project
TriCare (Hastings) Limited	Client
15/08/2024	Date

Project No: P2108580 Map Set: MS05-R01 EPSG: 7856

Legend

- Investigation Area
- Cadastre
- Monitoring Well (MW) locations
- Existing Groundwater Levels (mAHD)

0 mAHD
0.25 mAHD
0.5 mAHD
0.75 mAHD
1 mAHD
1.25 mAHD
1.5 mAHD
1.75 mAHD
2 mAHD

MW5
MW6
MW9
MW10

TWEED COAST ROAD

N

0 30 60 90 120 150 m

1:2500 @ A3

Viewport A

Notes:
- Aerial from Nearmap (2024).
- Cadastre from NSW Clip & Ship (2024).

martens
Environment | Water | Geotechnics | Civil | Projects

Map Title / Figure:

Groundwater Contour Plan

Map 06	Map
87-89 Tweed Coast Road, Hastings Point NSW 2489	Site
Proposed Seniors Housing Development	Project
Detailed Site Investigation	Sub-Project
TriCare (Hastings) Limited	Client
15/08/2024	Date

Project No: P2108580 Map Set: MS05-R01 EPSG: 7856

Map	Title
Map 01	Site Overview Plan
Map 02	Site Location Plan
Map 03	Topography
Map 04	Areas of Environmental Concern
Map 05	DSI Sampling Plan
Map 06	Groundwater Contour Plan

0 90 180 270 360 450 m

1:7500 @ A3

Viewport

Notes:
- Aerial from Nearmap (2024).
- Cadastre from NSW Clip & Ship (2024).

martens
Environment | Water | Geotechnics | Civil | Projects

Map Title / Figure:
Site Overview Plan

Map 01	Map
87-89 Tweed Coast Road, Hastings Point NSW 2489	Site
Proposed Seniors Housing Development	Project
Detailed Site Investigation	Sub-Project
TriCare (Hastings) Limited	Client
15/08/2024	Date

Project No: P2108580 Map Set: MS05-R01 EPSG: 7856

Appendix B – Proposed Development Plans

AREA SCHEDULE

NAME	AREA
BOWLS PAVILION	
GROUND LEVEL	75.68 m²
	75.68 m²
BUILDING D	
BASEMENT LEVEL	906.41 m²
GROUND LEVEL	1068.83 m²
LEVEL 01	1133.17 m²
LEVEL 02	1133.17 m²
	4241.57 m²
BUILDING E	
BASEMENT LEVEL	1218.84 m²
GROUND LEVEL	980.96 m²
LEVEL 01	980.95 m²
LEVEL 02	980.66 m²
	4161.40 m²
BUILDING F	
BASEMENT LEVEL	960.38 m²
GROUND LEVEL	712.71 m²
LEVEL 02	712.74 m²
	2385.84 m²
BUILDING G	
BASEMENT LEVEL	490.20 m²
GROUND LEVEL	382.97 m²
LEVEL 01	383.01 m²
LEVEL 02	383.01 m²
	1639.18 m²
POOL PAVILION	
GROUND LEVEL	435.32 m²
	435.32 m²
TOTAL GFA	12938.99 m²

EXISTING DEVELOPMENT GFA

THIS REFERENCES SHEET 'TP00' FROM THE EXISTING DEVELOPMENT STAMPED DA PACKAGE

BUILDING A	~4915m²
BUILDING B	~2755m²
BUILDING C	~8120m²
TOTAL GFA (APPROX.)	**~15790m²**

EXISTING DEVELOPMENT GFA

BUILDING D	~3335m²	BOWLS PAVILION	~75m²
BUILDING E	~2945m²	POOL PAVILION	~435m²
BUILDING F	~2140m²		
BUILDING G	~1150m²		
TOTAL GFA (APPROX.)	**~10080m²**		

OVERALL FLOOR SPACE RATIO (FSR) = APPROX. 1:0.68

AREAS BY NAME

- BOWLS PAVILION
- BUILDING D
- BUILDING E
- BUILDING F
- BUILDING G
- POOL PAVILION

1 OVERALL AREA PLAN - GFA (GROUND LEVEL)
1 : 500

NOTE: READ IN CONJUNCTION WITH INDIVIDUAL BUILDING AREA PLANS

Arqus DESIGN

Integrated perspective

Arqus Design Pty Ltd
ABN 68 135 616 303

Level 2 15 Malt Street
Fortitude Valley Qld 4006
PO Box 2455
New Farm Qld 4005

Registration:
Nominated Architect: Scott Peabody
QLD: 2644
NSW: 9038
VIC: 800111 (Arqus Design 600035)

mail@arqusdesign.com.au
www.arqusdesign.com.au

Phone 07 3358 0888
Fax 07 3358 0899

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NOTES

Contractors are to verify all dimensions on site before commencing any work or producing shop drawings.

Detail applicable to the scale of the drawing published.

DATE	REVISION	ISSUE
24.01.22	DRAFT DA PACKAGE	A
24.08.16	DRAFT DA PACKAGE	B
24.10.03	UPDATED DRAFT DA PACKAGE	C
24.10.09	DA PACKAGE	D

CLIENT

TriCare
Retirement Living. Home Care. Aged Care.

PROJECT

TRICARE HASTINGS POINT

87 TWEED COAST RD, HASTINGS POINT 2489, NSW

COUNTRY: BUNDJALUNG

DRAWING

OVERALL AREA PLAN - GFA (GROUND LEVEL)

JOB NUMBER	DESIGN	DRAWN	CHECKED
23-0025	SP	KF	SP

SCALE		DATE CREATED	NORTH
As indicated	@A1 @A3	01/12/23	

DRAWING NUMBER	ISSUE
DA-2-13	**D**

ISSUED FOR 9/10/2024 10:20:52 AM

DEVELOPMENT APPLICATION

AREA SCHEDULE (CAR PARK)

NAME	AREA
BUILDING D	
BASEMENT LEVEL	906.41 m²
BUILDING E	
BASEMENT LEVEL	1218.84 m²
BUILDING F	
BASEMENT LEVEL	960.38 m²
BUILDING G	
BASEMENT LEVEL	490.20 m²
TOTAL CAR PARK AREA	3575.83 m²

NO. OF CAR PARKING SPACES

BUILDING D	23	
BUILDING E	37	30 REQUIRED
BUILDING F	33	21 REQUIRED
BUILDING G	12	12 REQUIRED
ABOVE GROUND VISITORS	20	
TOTAL	125	TOTAL 63 REQUIRED

AREAS BY NAME

- BUILDING D
- BUILDING E
- BUILDING F
- BUILDING G

1 OVERALL AREA PLAN - GFA (BASEMENT)
1 : 500
NOTE: READ IN CONJUNCTION WITH INDIVIDUAL BUILDING AREA PLANS

Arqus DESIGN

Integrated perspective

Arqus Design Pty Ltd
ABN 68 135 616 303

Level 2 15 Malt Street
Fortitude Valley Qld 4006
PO Box 2455
New Farm Qld 4005

Registration:
Nominated Architect: Scott Peabody
QLD: 2644
NSW: 9038
VIC: 800111 (Arqus Design 600035)

mail@arqusdesign.com.au
www.arqusdesign.com.au

Phone 07 3358 0888
Fax 07 3358 0899

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Detail applicable to the scale of the drawing published.

DATE	REVISION	ISSUE
24.01.22	DRAFT DA PACKAGE	A
24.08.16	DRAFT DA PACKAGE	B
24.10.09	DA PACKAGE	C

CLIENT

TriCare
Retirement Living. Home Care. Aged Care.

PROJECT

TRICARE HASTINGS POINT

87 TWEED COAST RD, HASTINGS POINT 2489, NSW

COUNTRY: BUNDJALUNG

DRAWING

OVERALL AREA PLAN - GFA (BASEMENT)

JOB NUMBER	DESIGN	DRAWN	CHECKED
23-0025	SP	KF	SP

SCALE	DATE CREATED	NORTH
1 : 500 @A1 @A3	01/12/23	

DRAWING NUMBER **DA-2-12**

ISSUE **C**

ISSUED FOR 9/10/2024 10:20:20 AM

DEVELOPMENT APPLICATION

Integrated perspective

Arqus Design Pty Ltd
ABN 68 135 616 303

Level 2 15 Malt Street
Fortitude Valley Qld 4006
PO Box 2455
New Farm Qld 4005

Registration:
Nominated Architect: Scott Peabody
QLD: 2644
NSW: 9038
VIC: 800111 (Arqus Design 600035)

mail@arqusdesign.com.au
www.arqusdesign.com.au

Phone 07 3358 0888
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Detail applicable to the scale of the drawing published.

DATE	REVISION	ISSUE
24.01.22	DRAFT DA PACKAGE	A
24.08.16	DRAFT DA PACKAGE	B
24.10.03	UPDATED DRAFT DA PACKAGE	C
24.10.09	DA PACKAGE	D

LANDSCAPING AREAS

DEEP PLANTING (INCLUDES ENDANGERED ECOLOGICAL COMMUNITY ZONE)	12329.862m^2
LAWN	980.65m^2
PLANTER	816.16m^2
EXISTING LANDSCAPING	5439.16m^2 (approx.)
GROUND LEVEL TOTAL LANDSCAPE AREA	14126.67m^2
TOTAL AREA (WITH EXISTING)	19565.83m^2 (approx.)

NOTE: AREAS TO BE READ IN CONJUNCTION WITH LANDSCAPE DA PACKAGE. REFER TO ARCADIA PROJECT NO. 24-244 DRAWING 21

LANDSCAPING LEGEND

- CURRENT RIPARIAN VEGETATION TREE LINE
- CORE REHABILITATION ZONE
- RESIDUAL OUTER REHABILITATION ZONE
- DEEP PLANTING
- LAWN
- PLANTER
- EXISTING LANDSCAPE

REFER TO LANDSCAPE ARCHITECT'S DOCUMENTATION FOR ALL LANDSCAPE AREAS

- APZ LINE

CLIENT

TriCare
Retirement Living. Home Care. Aged Care.

PROJECT

TRICARE HASTINGS POINT

87 TWEED COAST RD, HASTINGS POINT 2489, NSW

COUNTRY: BUNDJALUNG

DRAWING

OVERALL AREA PLAN - LANDSCAPING AREAS (GROUND LEVEL)

JOB NUMBER	DESIGN	DRAWN	CHECKED
23-0025	SP	KF,SS	SP

SCALE	DATE CREATED	NORTH
1 : 500 @A1 @A3	01/12/23	

DRAWING NUMBER **DA-2-16** ISSUE **D**

ISSUED FOR

9/10/2024 10:22:15 AM

DEVELOPMENT APPLICATION

NOTES

LOT AREAS AND BOUNDARY DIMENSIONS HAVE BEEN COMPILED FROM DEPOSITED PLANS AVAILABLE AT NSW LAND REGISTRY SERVICES (NSW LRS). NO BOUNDARY SURVEY OR INVESTIGATION HAS BEEN MADE AND NO BOUNDARIES HAVE BEEN MARKED. ACCORDINGLY THE POSITION OF IMPROVEMENTS RELATIVE TO BOUNDARIES SHOWN HEREON IS DIAGRAMMATIC ONLY.

BEARINGS SHOWN ON THIS PLAN ARE ORIENTATED TO NORTH VIDE MGA. IF SHADOW DIAGRAMS ARE TO BE CALCULATED THEY MUST BE CALCULATED USING TRUE NORTH.

SERVICES & UTILITIES SHOWN ON THIS PLAN HAVE BEEN LOCATED BY COMBINATION OF FIELD SURVEY AND REFERENCE TO SERVICE PLANS FROM STATUTORY AUTHORITIES. ONLY VISIBLE AND APPARENT SERVICE COVERS AND POLES HAVE BEEN LOCATED BY FIELD SURVEY. SERVICE DETAILS AND LOCATIONS SHOULD BE CONFIRMED WITH THE RELEVANT SERVICE AUTHORITY DURING DESIGN & PRIOR TO ANY CONSTRUCTION. THE LOCATION OF UNDERGROUND SERVICES HAS NOT BEEN INVESTIGATED BY USHER & COMPANY PTY LTD.

WHERE THE EXACT LOCATION OF UNDERGROUND SERVICES IS CRITICAL TO THE DESIGN OR CONSTRUCTION THE RELEVANT PARTY SHOULD ARRANGE TO HAVE AN UNDERGROUND SERVICES TRACE CARRIED OUT TO CONFIRM THE SERVICES EXACT LOCATION. IN THIS REGARD ALL PARTIES SHOULD CONTACT THE 'DIAL BEFORE YOU DIG' SERVICE.

CONTOUR INTERVAL 1.0m MAJOR 0.25m MINOR

AHD HEIGHT DATUM HAS BEEN TRANSFERRED TO THE SUBJECT LOT VIA TRIG HEIGHTING. AHD LEVELS SHOWN HAVE AN ACCURACY OF 0.05m.

LEGEND

0.3/8/8 — 0.3 TRUNK DIAMETER/6m FOLIAGE SPREAD/8m HEIGHT TREE SIZES ARE ESTIMATES ONLY

UE — UNDERGROUND POWER (NOT SURVEYED)
CUG — UNDERGROUND COMMUNICATIONS (NOT SURVEYED)
UNDERGROUND UNKNOWN SERVICE (NOT SURVEYED)
W — UNDERGROUND WATER (NOT SURVEYED)
S — S — UNDERGROUND SEWER (NOT SURVEYED)
// // FENCE

BPZ BUFFER PROTECTION ZONE
FL FLOOR LEVEL
INV INVERT
SV STOP VALVE
STOP VALVE
STORMWATER GRATE
SEWER MANHOLE
HYDRANT
IC INSPECTION COVER
GATE
PHOTO LOCATION & DIRECTION
BENCHMARK
+33.00 SPOT HEIGHTS

DIAL BEFORE YOU DIG www.1100.com.au

Notes :

1. This plan is prepared for the client from a combination of field survey and existing records for the purpose defined by the client and should not be used for any other purpose.
2. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services. This note is an integral part of this plan.
3. Origin of MGA Coordinates and AHD Vertical datum:
   SS48797 166840
   Easting: 556118.118
   Northing: 6861747.786 (AHD)
   MGA (Map Grid Of Australia 1994 - Zone 56)
4. This plan is on ground '1:1' scale coordinates orientated to MGA azimuth using GNSS. To convert to MGA grid coordinates apply the scale factor of 0.99963.

UNDERGROUND SERVICES APPROXIMATE ONLY (PLOTTED USING DBYD)

20 METRE BANK OFFSET (STAKED ONSITE MARKED WITH PINK FLAGGING)
BUSH PROTECTION ZONE (WHITE TOP STAKE ONSITE WITH YELLOW)

CRITICAL NOTES:

1. It appears that numerous private underground services are present onsite. Only the surface features of these have located by Usher and Company hereon. It is highly recommended that a service locator be employed to trace services prior to any construction.
2. The 20m bank offset shown on this plan has been determined from the current Cudgera Creek top of bank. The current Cudgera Creek top of bank differs from the original creek boundary shown on CP7158-1759. We recommend a plan of redefinition be carried out on the subject lot to determine current natural boundary position.

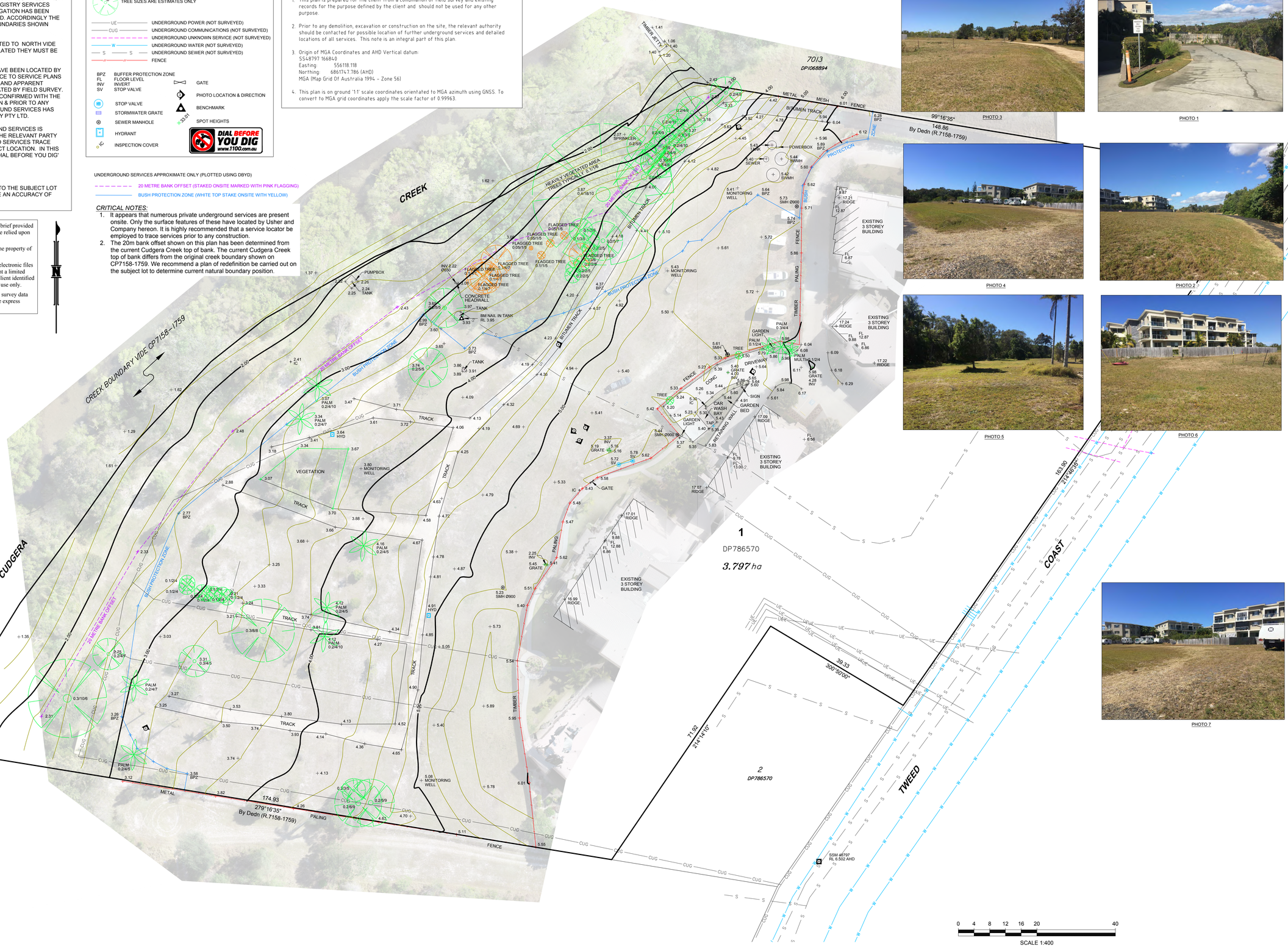


PHOTO 3


PHOTO 1

PHOTO 4

PHOTO 2

PHOTO 5

PHOTO 6

PHOTO 7

0 4 8 12 16 20 40
SCALE 1:400

USHER & COMPANY
Surveying & Land Development Consultants
A.B.N. 70 128 414 602

Suite 3, 64-68 McNamara Street, Orange NSW 2800
PO Box 8069, ORANGE NSW 2800
Phone: (02) 6361 1422
Fax: (02) 6361 1423
Email: ausher@usherandcompany.com.au

APPROVED

Amendments

ISSUE	DATE	DETAILS
A	16-09-2019	Original Issue

PLAN:

PLAN OF PARTIAL DETAIL AND LEVELS
AT No.85-87 TWEED COAST, HASTINGS POINT
BEING LOT 1 IN DP 786570

LGA:	TWEED
SUBURB:	HASTINGS POINT
ORIGIN:	SSM 48797 RL 6.502 AHD CLASS LB, ORDER L2 SCIMS 09/09/2019
REDUCTION RATIO:	1:400
DATUM:	AHD
DATE OF SURVEY:	12-09-2019
SURVEYED BY:	BR / JT
DRAWN BY:	LL
CLIENT:	TRICARE
PLAN REFERENCE:	10623
	B1
ISSUE:	A

Appendix C – Groundwater Bore Records

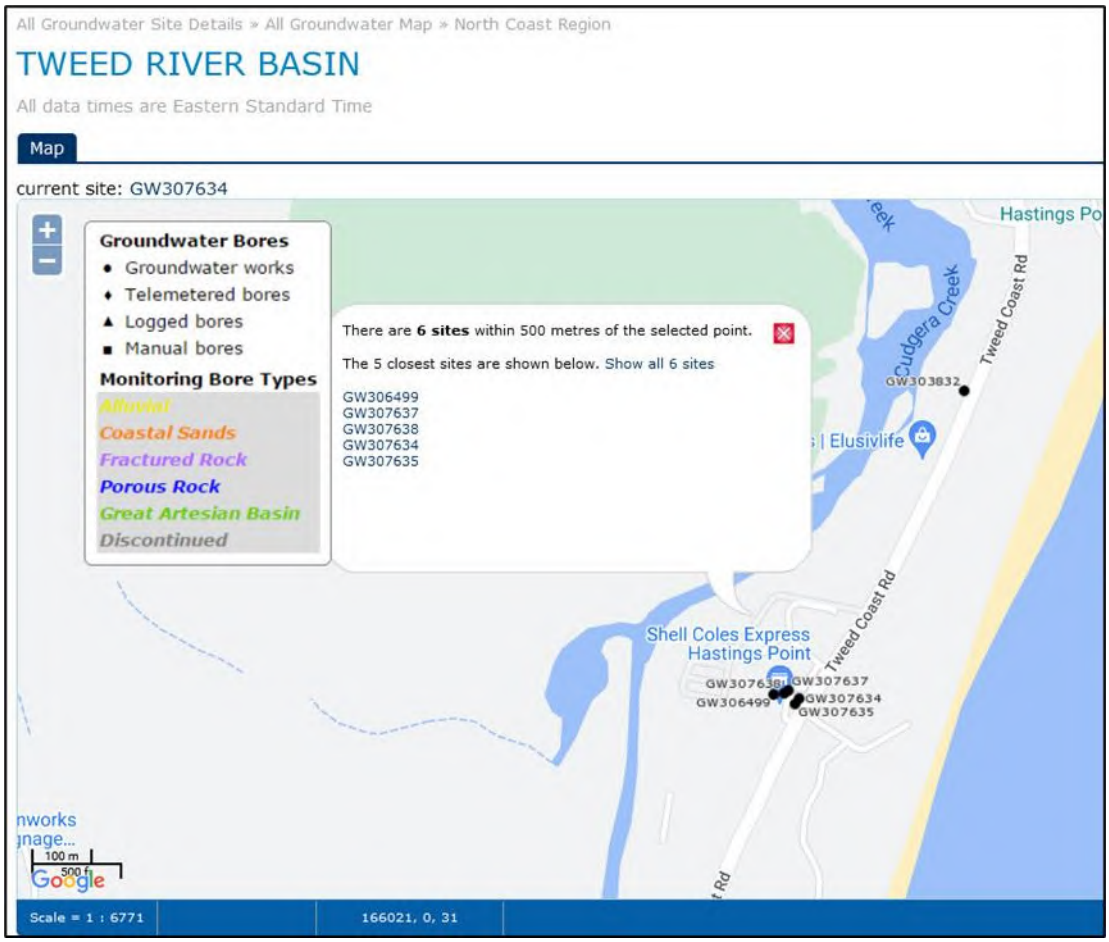

Figure 1: Groundwater bore location plan

WaterNSW
Work Summary

GW303832

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): DOMESTIC

Work Type: Spear
Work Status:
Construct.Method: Rotary - Water
Owner Type: Private

Commenced Date:
Completion Date: 06/03/2003
Final Depth: 6.40 m
Drilled Depth: 6.40 m

Contractor Name: Brian William Mills
Driller: Brian William Mills
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m): 5.200
Salinity Description:
Yield (L/s): 0.400

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ROUS	CUDGEN	LT391 DP755701
Licensed:			

Region: 30 - North Coast
River Basin: 202 - BRUNSWICK RIVER
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: (Unknown)
Northing: 6862256.000
Easting: 556390.000
Latitude: 28°21'53.1"S
Longitude: 153°34'31.7"E

GS Map: -
MGA Zone: 56
Coordinate Source: Map Interpre

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	6.40	97			Rotary - Water
1	1	Casing	Pvc Class 12	-0.30	5.30	115	103		Driven into Hole, Other
1	1	Opening	Screen - Gauze/ Mesh	5.80	6.40	50		0	Other, A: 0.21mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
5.80	6.40	0.60	Unknown	5.20	5.20	0.40	6.40	01:00:00	

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.50	0.50	SAND GREY FINE	Sand Grains (Lithic)	
0.50	5.80	5.30	SAND WHITE MG	Sand	
5.80	6.40	0.60	FREE FLOWING SAND WHITE MG	Invalid Code	

***** End of GW303832 *****

WaterNSW
Work Summary

GW306499

Licence:
Licence Status:
Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Solid
Owner Type: Private

Commenced Date:
Completion Date: 26/11/2006
Final Depth: 4.50 m
Drilled Depth: 4.50 m

Contractor Name: Opalbury Pty Ltd
Driller: Warwick Nash
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m): 3.500
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ROUS	CUDGEN	1//786570
Licensed:			

Region: 30 - North Coast
River Basin: 201 - TWEED RIVER
Area/District:
CMA Map: 9641-3N
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6861785.000
Easting: 556090.000
Latitude: 28°22'08.5"S
Longitude: 153°34'20.7"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	4.50	100			Auger - Solid Flight
1		Annulus	Concrete	0.00	0.50	100	50		
1		Annulus	Bentonite	2.00	4.50	100	50		
1		Annulus	Waterworn/ Rounded	3.00	4.50	100	50		Graded
1	1	Casing	Pvc Class 12	0.00	4.50	50	44		Seated, Packer
1	1	Opening	Slots - Horizontal	2.00	4.50	50		0	Mechanically Slotted, PVC Class 12, Packer, SL: 50.0mm, A: 1.00mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
3.50	4.50	1.00	Unknown	3.50					

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	4.50	4.50	Sand, medium grained, light grey brown, moist becoming very moist then wet, medium dense	Sand	

Remarks

26/11/2006: Form A Remarks:
Nat Carling, 15-Dec-2009: No completion date was provided, taken from drillers signature. Requestesd missing seal depths, slot details, completion date & full drillers log interpretation from the driller.
19/05/2010: Nat Carling, 19-May-2010: Updated missing information, as received from the driller.

***** End of GW306499 *****

WaterNSW
Work Summary

GW307634

Licence: 30BL185749 **Licence Status:** ACTIVE

Authorised Purpose(s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Hollow
Owner Type: Private

Commenced Date:
Completion Date: 17/03/2011
Final Depth: 6.00 m
Drilled Depth: 6.00 m

Contractor Name: Numac
Driller: Unkown Unknown
Assistant Driller: Graham Lutch

Property: SHELL Lot 2, Coast Rd HASTINGS POINT 2489 NSW
GWMA: -
GW Zone: -
Standing Water Level (m): 3.595
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ROUS	CUDGEN	2//786570
Licensed:	ROUS	CUDGEN	Whole Lot 2//786570

Region: 30 - North Coast
River Basin: 201 - TWEED RIVER
Area/District:
CMA Map: 9641-3N
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6861779.000
Easting: 556130.000
Latitude: 28°22'08.7"S
Longitude: 153°34'22.2"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	6.00	200			Auger - Hollow Flight
1		Annulus	Cement Grout	0.00	1.50	200	50		
1		Annulus	Bentonite	1.50	2.50	200	50		
1		Annulus	Waterworn/ Rounded	2.50	6.00	200	50		Graded
1	1	Casing	P.V.C.	0.00	6.00	50			Seated on Bottom,
1	1	Opening	Slots	3.00	6.00	50		0	PVC, ()

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.20	0.20	Fill; Concrete	Fill	
0.20	1.30	1.10	Sand; moist, grey, coarse, subangular, sorted	Sand	

1.30	3.50	2.20	Sand; white, fine, well graded, subangular, moist	Sand	
3.50	6.00	2.50	Sand; brown, fine, well graded, subangular, moist	Sand	

Remarks

23/06/2015: Form A Remarks:
Nat Carling, 23-June-2015; All details were provided on Form-AG, consultants log & location map.

***** End of GW307634 *****

WaterNSW
Work Summary

GW307635

Licence:
Licence Status:
Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Hollow
Owner Type: Private

Commenced Date:
Completion Date: 17/03/2011
Final Depth: 6.00 m
Drilled Depth: 6.00 m

Contractor Name: Numac
Driller: Unkown Unknown
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m): 5.475
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ROUS	CUDGEN	2//786570
Licensed:			

Region: 30 - North Coast
River Basin: 201 - TWEED RIVER
Area/District:
CMA Map: 9641-3N
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6861769.000
Easting: 556123.000
Latitude: 28°22'09.0"S
Longitude: 153°34'21.9"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	6.00	200			Auger - Hollow Flight
1		Annulus	Cement Grout	0.00	2.00	200	50		
1		Annulus	Bentonite	2.00	2.50	200	50		
1		Annulus	Waterworn/ Rounded	2.50	6.00	200	50		Graded
1	1	Casing	P.V.C.	0.00	6.00	50			Seated on Bottom,
1	1	Opening	Slots	3.00	6.00	50		0	PVC, ()

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.10	0.10	Fill; Concrete	Fill	

0.10	1.40	1.30	Sand; grey, coarse, well graded, subangular, moist	Sand	
1.40	6.00	4.60	Sand; white, fine, well graded, subangular, moist	Sand	

Remarks

17/03/2011: Form A Remarks:
Nat Carling, 23-June-2015; All details were provided on Form-AG, consultants log & location map.

***** End of GW307635 *****

WaterNSW
Work Summary

GW307637

Licence:
Licence Status:
Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Hollow
Owner Type: Private

Commenced Date:
Completion Date: 18/03/2011
Final Depth: 6.00 m
Drilled Depth: 6.00 m

Contractor Name: Numac
Driller: Matthew Lee Hansen
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m): 3.510
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ROUS	CUDGEN	2//786570
Licensed:			

Region: 30 - North Coast
River Basin: 201 - TWEED RIVER
Area/District:
CMA Map: 9641-3N
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6861792.000
Easting: 556113.000
Latitude: 28°22'08.3"S
Longitude: 153°34'21.6"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	6.00	200			Auger - Hollow Flight
1		Annulus	Cement Grout	0.00	1.50	200	50		
1		Annulus	Bentonite	1.50	2.50	200	50		
1		Annulus	Waterworn/ Rounded	2.50	6.00	200	50		Graded
1	1	Casing	P.V.C.	0.00	6.00	50			Seated on Bottom,
1	1	Opening	Slots	3.00	6.00	50		0	PVC, ()

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.40	0.40	Fill; Concrete	Fill	

0.40	1.50	1.10	Sand; grey, moist, coarse, well graded, subangular	Sand	
1.50	3.70	2.20	Sand; white, coarse, well graded, subangular, moist	Sand	
3.70	6.00	2.30	Sand; brown, fine, well graded, subangular, moist	Sand	

Remarks

18/03/2011: Form A Remarks:
Nat Carling, 23-June-2015; All details were provided on Form-AG, consultants log & location map.

***** End of GW307637 *****

WaterNSW
Work Summary

GW307638

Licence:
Licence Status:
Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Hollow
Owner Type: Private

Commenced Date:
Completion Date: 19/03/2011
Final Depth: 6.00 m
Drilled Depth: 6.00 m

Contractor Name: Numac
Driller: Matthew Lee Hansen
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m): 4.515
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ROUS	CUDGEN	2//786570
Licensed:			

Region: 30 - North Coast
River Basin: 201 - TWEED RIVER
Area/District:
CMA Map: 9641-3N
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6861787.000
Easting: 556107.000
Latitude: 28°22'08.4"S
Longitude: 153°34'21.4"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	6.00	200			Auger - Hollow Flight
1		Annulus	Cement Grout	0.00	1.00	200	50		
1		Annulus	Bentonite	1.00	2.50	200	50		
1		Annulus	Waterworn/ Rounded	2.50	6.00	200	50		Graded
1	1	Casing	P.V.C.	0.00	6.00	50			Seated on Bottom,
1	1	Opening	Slots	3.00	6.00	50		0	PVC, ()

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.20	0.20	Fill; Concrete	Fill	
0.20	0.40	0.20	Fill	Fill	

0.40	2.10	1.70	Sand; grey, medium to coarse, well graded, well rounded	Sand	
2.10	6.00	3.90	Sand; white, medium to coarse, well graded, well rounded	Sand	

Remarks

19/03/2011: Form A Remarks:
Nat Carling, 23-June-2015; All details were provided on Form-AG, consultants log & location map.

***** End of GW307638 *****

Appendix D – Test Pit and Monitoring Well Construction Logs

CLIENT	TriCare (Hastings) Limited	COMMENCED	30/07/2024	COMPLETED	30/07/2024	**REF TP101**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5718460659	RL SURFACE	1.0	DATUM 56J
OPERATOR	Client Operator	LATITUDE	-28.3692430671	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A	0.2	TP101/0.1-0.2	PID: 2.1		SM	FILL: Gravelly to silty SAND, grey, dark grey, medium grained, medium sized gravel, frequent , no odour , no staining, no observed asbestos containing material.	No Odor , No Staining , No Inclusions
		0.5					FILL: Sandy to silty SAND, grey, dark grey, medium grained, medium grained sand, no odour , no staining, no observed asbestos containing material.	
			TP101/0.5-0.6	PID: 3.1		SP	SAND: brown.	No Odor , No Staining , No Anthropogenic Inclusions
		1	TP101/1.1-1.2	PID: 2.7				
							TP101 Terminated-Target Depth Reached at 1.2m	
		2						

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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mail@martens.com.au WEB: http://www.martens.com.au

Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	30/07/2024	COMPLETED	30/07/2024	**REF TP102**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5715755458	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3691578886	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A	0.3	TP102/0.1 - 0.2	PID: 2.8		SP	FILL: Gravelly SAND, grey - dark grey, medium grained, coarse sized gravel.	No Odors, No Staining, No Anthropogenic Inclusions
		0.6	TP102/0.5 - 0.6	PID: 2,5		SM	FILL: Silty SAND, grey - dark grey, medium grained.	No Odor, No Staining, No Anthropogenic Inclusions
			TP102/ 1.1 - 1.2	PID: 2.4		SP	SAND: brown.	No Odor , No Staining , No Anthropogenic Inclusions
		1					**TP102 Terminated-Target Depth Reached at 1m**	
		2						

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mail@martens.com.au WEB: http://www.martens.com.au

Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	30/07/2024	COMPLETED	30/07/2024	**REF TP103**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5712981526	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3691150747	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator						SM	FILL: Silty SAND, grey - dark grey, medium grained, plastic fragments.	No Odor, No Staining
			TP103/0.1 - 0.2	PID: 2.4				
			TP103/0.4 - 0.5	PID: 2.6				
		1						
			TP103/1.0-1.1	PID: 2.3		SP	SAND: brown.	No Odor , No Staining , No Anthropogenic Inclusions
			TP103/1.4-1.5	PID: 2.4				
		2					**TP103 Terminated at 2m (Collapse)**	

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	30/07/2024	COMPLETED	30/07/2024	**REF TP104**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5710920663	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3691015599	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SP	FILL: Gravelly SAND, grey - dark grey, medium grained, coarse sized gravel, plastic pieces.	No Odors, No Staining
			TP104/0.1 - 0.2	PID: 2.3				
			TP104/0.4 - 0.5	PID: 2,6				
		0.5				SM	FILL: Silty SAND, grey - dark grey, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
		0.6				SP	SAND: brown.	No Odor , No Staining , No Anthropogenic Inclusions
			TP104/ 1.0-1.1					
		1		PID: 2.7				
		2					**TP104 Terminated-Target Depth Reached at 1.1m**	

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	30/07/2024	COMPLETED	30/07/2024	**REF TP105**	
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED			
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580	
EQUIPMENT		LONGITUDE	153.5708056759	RL SURFACE		DATUM	56J
OPERATOR		LATITUDE	-28.3689921610	ASPECT		SLOPE	

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A	0.4	TP105/0.1-0.2	PID: 2.4		SP	FILL: Gravelly SAND, grey - dark grey, medium grained, coarse sized gravel, timber to plastic pieces.	No Odors, No Staining
			TP105/0.5-0.6	PID: 2.7		SM	FILL: Silty SAND, grey - dark grey, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
		1	TP105/1.1-1.2	PID: 3.1				
		2					**TP105 Terminated-Target Depth Reached at 1.2m (Collapse)**	

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	30/07/2024	COMPLETED	30/07/2024	**REF TP106**	
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED			
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580	
EQUIPMENT		LONGITUDE	153.5708224958	RL SURFACE		DATUM	56J
OPERATOR		LATITUDE	-28.3688746665	ASPECT		SLOPE	

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A	0				SP	FILL: Gravelly SAND, grey - dark grey, medium grained, coarse sized gravel.	No Odors, No Staining
			TP106/0.1-0.2	PID: 2.3				
			TP106/0.4-0.5	PID: 2.2				
		0.5				SP	FILL: SAND, grey - dark grey, black, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
			TP106/0.6-0.7	PID: 2.7				
		0.7				SP	SAND: pale grey.	No Odor , No Staining , No Anthropogenic Inclusions
			TP106/0.9-1.0	PID: 2.6				
		1					**TP106 Terminated-Target Depth Reached at 1m (Collapse)**	
		2						

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	30/07/2024	COMPLETED	30/07/2024	**REF TP107**	
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED			
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580	
EQUIPMENT		LONGITUDE	153.5710706063	RL SURFACE		DATUM	56J
OPERATOR		LATITUDE	-28.3688746665	ASPECT		SLOPE	

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SP	FILL: Gravelly SAND, grey - dark grey, medium grained, coarse sized gravel.	No Odors, No Staining
			TP107/0.1-0.2	PID: 2.4				
			TP107/0.4-0.5	PID: 2.5				
		0.7	TP107/0.7-0.8			SP	SAND: grey.	No Odor , No Staining , No Anthropogenic Inclusions
		1						
		2					**TP107 Terminated-Target Depth Reached at 1.1m (Collapse)**	

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	30/07/2024	COMPLETED	30/07/2024	**REF TP108**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5713320900	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3689534600	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator						SP	FILL: Gravelly SAND, grey - dark grey, medium grained, coarse sized gravel.	No Odors, No Staining
			TP108/0.1-0.2	PID: 2.3				
		0.3				SP	FILL: SAND, grey - dark grey, black, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
			TP108/0.4-0.5	PID: 2.4				
		0.5				SP	SAND: brown.	No Odor , No Staining , No Anthropogenic Inclusions
		1	TP108/1.1-1.2					
			TP108/1.5-1.6	PID: 2.6				
			TP1081.9-2.0	PID: 2.6				
		2					**TP108 Terminated at 2m (Collapse)**	

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	30/07/2024	COMPLETED	30/07/2024	**REF TP109**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5715882200	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3690088300	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SP	FILL: Gravelly SAND, grey - dark grey, medium grained, coarse sized gravel.	No Odors, No Staining
			TP109/0.1-0.2	PID: 2.3				
		0.3						
			TP109/0.4-0.5	PID: 2.4		SP	FILL: SAND, grey - dark grey, black, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
		1	TP109/1.0-1.1	PID: 2.6				
			TP109/1.5-1.6	PID: 2.3				
		2					**TP109 Terminated at 1.7m (Collapse)**	

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	30/07/2024	COMPLETED	30/07/2024	**REF TP110**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5718119500	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3690299800	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SM	FILL: Silty to gravelly SAND, brown, medium grained, coarse sized gravel, plastic pieces.	No Odors, No Staining
			TP110/0.1-0.2	PID: 2.3				
			TP110/0.4-0.5	PID: 2.4				
			TP110/0.9-1.0	PID: 2.6				
		1					**TP110 Terminated-Target Depth Reached at 1m (Collapse)**	
		2						

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	30/07/2024	COMPLETED	30/07/2024	**REF TP111**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5718205300	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3689113900	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SM	FILL: Silty to gravelly SAND, brown, medium grained, coarse sized gravel, with medium plasticity clay.	No Odor , No Staining , No Anthropogenic Inclusions
			TP111/0.1-0.2	PID: 2.3				
			TP111/0.4-0.5	PID: 2.3				
		1					**TP111 refusal at 0.6m (Concrete)**	
		2						

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	30/07/2024	COMPLETED	30/07/2024	**REF TP112**	
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED			
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580	
EQUIPMENT		LONGITUDE	153.5715887500	RL SURFACE		DATUM	56J
OPERATOR		LATITUDE	-28.3688566600	ASPECT		SLOPE	

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SP	FILL: Gravelly SAND, grey - dark grey, medium grained, coarse sized gravel.	No Odors, No Staining
			TP112/0.1-0.2	PID: 2.4				
		0.3						
			TP112/0.4-0.5	PID: 2.4			FILL: SAND, grey - dark grey, black, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
		1	TP112/0.9-1.0	PID: 2.3		SP		
			TP112/1.5-1.6	PID: 2.6				
		2					**TP112 Terminated at 1.6m (Collapse)**	

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	30/07/2024	COMPLETED	30/07/2024	**REF TP113**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5713864988	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3687977648	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A	0.3	TP113/0.1-0.2	PID: 2.3		SP	FILL: Gravelly SAND, grey - dark grey, medium grained, coarse sized gravel.	No Odors, No Staining
			TP113/0.4-0.5	PID: 2.4		SP	FILL: SAND, grey - dark grey, black, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
		1	TP113/0.9-1.0	PID: 2.4				
			TP113/1.4-1.5	PID: 2.6				
		2					**TP113 Terminated at 1.5m (Collapse)**	

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED	30/07/2024	**REF TP114**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5711622703	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3687023493	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator						SM	FILL: Gravelly to silty SAND, grey, dark grey, medium grained, medium sized gravel.	No Odor , No Staining , No Inclusions
			TP114/0.1-0.2	PID: 2.2				
		0.3					FILL: Sandy to silty SAND, grey, dark grey, medium grained, medium grained sand.	No Odor, No Staining
			TP114/0.4-0.5					
		0.5		PID: 2.4			SAND: brown.	No Odor , No Staining , No Anthropogenic Inclusions
		1	TP114/1.0-1.1	PID: 2.4				
							TP114 Terminated at 1.2m (Collapse)	
		2						

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED	30/07/2024	**REF TP115**	
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED			
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580	
EQUIPMENT		LONGITUDE	153.5709641357	RL SURFACE		DATUM	56J
OPERATOR		LATITUDE	-28.3686567510	ASPECT		SLOPE	

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A	0.3	TP115/0.1-0.2	PID: 2.2			FILL: Sandy to silty SAND, grey, dark grey, medium grained, medium grained sand.	
			TP115/0.4-0.5	PID: 2.4		SM	FILL: Silty SAND, grey, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
		1	TP115/0.9/1.0	PID: 2.4				
		2					**TP115 refusal at 1.1m (Buried tree)**	

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED	30/07/2024	**REF TP116**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5710765482	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3684928647	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A	0.3	TP116/0.1-0.2	PID: 2.3		SM	FILL: Gravelly to silty SAND, grey, dark grey, medium grained, medium sized gravel, plastic pieces.	No Odor, No Staining
			TP116/0.4-0.5	PID: 2.4			FILL: Sandy to silty SAND, grey, dark grey, medium grained, medium grained sand.	No Odor , No Staining , No Anthropogenic Inclusions
		1					**TP116 Terminated-Target Depth Reached at 1m**	
		2						

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED	30/07/2024	**REF TP117**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5713024766	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3685250507	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SM	FILL: Gravelly to silty SAND, grey, dark grey, medium grained, medium sized gravel.	No Odor , No Staining
			TP117/0.1-0.2	PID: 2.4				
		0.4	TP117/0.4-0.5	PID: 2.5			FILL: Sandy to silty SAND, grey, dark grey, medium grained, medium grained sand.	No Odor , No Staining , No Anthropogenic Inclusions
		0.7				SP	SAND: brown.	No Odor , No Staining , No Anthropogenic Inclusions
			TP117/0.9-1.0	PID: 2.7				
		1						
		2					**TP117 Terminated-Target Depth Reached at 1.1m**	

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED	30/07/2024	**REF TP118**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5716529300	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3682559700	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A	0.5	TP118/0.1-0.2	PID: 2.4		SM	FILL: Gravelly to silty SAND, grey, dark grey, medium grained, medium sized gravel.	No Odor , No Staining , No Anthropogenic Inclusions
			TP118/0.6-0.7	PID: 2.5		SP	SAND: brown with dark brown.	No Odor , No Staining , No Anthropogenic Inclusions
		1	TP118/1.0-1.1	PID: 2.4				
		2					**TP118 Terminated-Target Depth Reached at 1.4m**	

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP119**	
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED			
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580	
EQUIPMENT		LONGITUDE	153.5718003354	RL SURFACE		DATUM	56J
OPERATOR		LATITUDE	-28.3683383395	ASPECT		SLOPE	

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A	0				SC	FILL: Gravelly to clayey to silty SAND, yellowish brown, medium grained, medium sized gravel.	No Odor , No Staining , No Anthropogenic Inclusions
			TP119/0.1-0.2	PID: 2.3				
		0.4	TP119/0.4-0.5	PID: 2.5		SP	SAND: pale grey with dark brown.	No Odor , No Staining , No Anthropogenic Inclusions
		0.7				SP	SAND: pale grey.	No Odor , No Staining , No Anthropogenic Inclusions
		1	TP119/0.9-1.0	PID: 2.6				
			TP119/1.3-1.4	PID: 2.4				
		2					**TP119 Terminated-Target Depth Reached at 1.5m**	

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP120**	
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED			
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580	
EQUIPMENT		LONGITUDE	153.5719307500	RL SURFACE		DATUM	56J
OPERATOR		LATITUDE	-28.3684511400	ASPECT		SLOPE	

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A	0.3	TP120/0.1-0.2	PID: 2.4		SC	FILL: Gravelly to clayey to silty SAND, yellowish brown, medium grained, medium sized gravel.	No Odor , No Staining , No Anthropogenic Inclusions
		0.6	TP120/0.5-0.6	PID: 2.4		SP	SAND: grey.	No Odor , No Staining , No Anthropogenic Inclusions
		1	TP120/0.9-1.0	PID: 2.6		SP	SAND: pale grey.	No Odor , No Staining , No Anthropogenic Inclusions
		2					**TP120 Terminated-Target Depth Reached at 1.3m**	

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP121**	
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED			
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580	
EQUIPMENT		LONGITUDE	153.5720599900	RL SURFACE		DATUM	56J
OPERATOR		LATITUDE	-28.3682950300	ASPECT		SLOPE	

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SP	FILL: Gravelly SAND, yellowish brown, medium grained, medium sized gravel.	No Odor , No Staining , No Anthropogenic Inclusions
			TP121/0.1-0.2	PID: 2.3				
				PID: 2.5				
			TP121/0.5-0.6					
		0.9		PID: 2.6		SP	SAND: pale grey.	No Odor , No Staining , No Anthropogenic Inclusions
		1	TP121/1.0-1.1					
				PID: 2.4			**TP121 Terminated-Target Depth Reached at 1.2m**	
		2						

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP122**	
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED			
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580	
EQUIPMENT		LONGITUDE	153.5722905000	RL SURFACE		DATUM	56J
OPERATOR		LATITUDE	-28.3682642300	ASPECT		SLOPE	

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A	0				SC	FILL: Gravelly to clayey to silty SAND, yellowish brown, medium grained, medium sized gravel.	No Odor , No Staining , No Anthropogenic Inclusions
			TP122/0.1-0.2	PID: 2.3				
		0.3				SP	SAND: pale grey.	No Odor , No Staining , No Anthropogenic Inclusions
			TP122/0.4-0.5	PID: 2.4				
			TP122/0.9-1.0	PID: 2.3				
		1					**TP122 Terminated-Target Depth Reached at 1m**	
		2						

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP123**	
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED			
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580	
EQUIPMENT		LONGITUDE	153.5722600400	RL SURFACE		DATUM	56J
OPERATOR		LATITUDE	-28.3680804600	ASPECT		SLOPE	

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A	0				SC	FILL: Gravelly to clayey to silty SAND, yellowish brown, medium grained, medium sized gravel.	No Odor , No Staining , No Anthropogenic Inclusions
			TP123/0.1-0.2	PID: 2.4				
		0.3				SP	SAND: pale grey with dark brown.	No Odor , No Staining , No Anthropogenic Inclusions
			TP123/0.5-0.6	PID: 2.5				
		0.9				SP	SAND: white, pale grey.	No Odor , No Staining , No Anthropogenic Inclusions
		1	TP123/1.0-1.1	PID: 2.5				
		2					**TP123 Terminated-Target Depth Reached at 1.5m**	

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP124**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5722962300	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3679079800	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A	0.3	TP124/0.1-0.2	PID: 2.3		SM	FILL: Gravelly to silty SAND, grey brown, medium grained, medium sized gravel.	No Odor , No Staining , No Anthropogenic Inclusions
			TP124/0.5-0.6	PID: 2.4		SP	SAND: pale grey with dark brown.	No Odor , No Staining , No Anthropogenic Inclusions
		0.9						
		1	TP124/1.0-1.1	PID: 2.6		SP	SAND: pale grey, white.	No Odor , No Staining , No Anthropogenic Inclusions
		2					**TP124 Terminated-Target Depth Reached at 1.3m**	

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP125**	
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED			
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580	
EQUIPMENT		LONGITUDE	153.5725126500	RL SURFACE		DATUM	56J
OPERATOR		LATITUDE	-28.3679602800	ASPECT		SLOPE	

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SC	FILL: Gravelly to clayey to silty SAND, yellowish brown, medium grained, medium sized gravel.	No Odor , No Staining , No Anthropogenic Inclusions
			TP125/0.1-0.2	PID: 2.3				
			TP125/0.3-0.4	PID: 2.4				
		0.4				SP	SAND: pale grey with dark brown.	No Odor , No Staining , No Anthropogenic Inclusions
		0.5	TP125/0.5-0.6			SP	SAND: pale grey, white.	No Odor , No Staining , No Anthropogenic Inclusions
		1					**TP125 Terminated-Target Depth Reached at 0.6m**	
		2						

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP126**	
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED			
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580	
EQUIPMENT		LONGITUDE	153.5724328978	RL SURFACE		DATUM	56J
OPERATOR		LATITUDE	-28.3677409792	ASPECT		SLOPE	

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A	0.4	TP126/0.1-0.2	PID: 2.3		SC	FILL: Gravelly to clayey to silty SAND, yellowish brown, medium grained, medium sized gravel.	No Odor , No Staining , No Anthropogenic Inclusions
		0.8	TP126/0.5-0.6	PID: 2.7		SP	SAND: pale grey with dark brown.	No Odor , No Staining , No Anthropogenic Inclusions
		1	TP126/1.0-1.1	PID: 2.7		SP	SAND: pale grey, brown.	No Odor , No Staining , No Anthropogenic Inclusions
		2					**TP126 Terminated-Target Depth Reached at 1.3m**	

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP127**	
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED			
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580	
EQUIPMENT		LONGITUDE	153.5726156035	RL SURFACE		DATUM	56J
OPERATOR		LATITUDE	-28.3676669311	ASPECT		SLOPE	

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SM	FILL: Gravelly to silty SAND, grey, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
			TP127/0.1-0.2	PID: 2.7				
			TP127/0.5-0.6	PID: 2.8				
		1					**TP127 Terminated at 0.8m**	
		2						

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP128**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5725272700	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3681247500	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A		TP128/0.0-0.1	PID: 2.2		SM	FILL: Gravelly to silty SAND, yellowish brown, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
		1					**TP128 refusal at 0.2m**	
		2						

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Suite 201, 20 George St. Homsby, NSW 2077 Australia
Phone: (02) 9476 9999 Fax: (02) 9476 8767
mail@martens.com.au WEB: http://www.martens.com.au

Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP129**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5715843000	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3681450100	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SM	FILL: Gravelly to silty SAND, pale grey white, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
			TP129/0.1-0.2	PID: 2.4				
			TP129/0.5-0.6	PID: 2.3				
		1					**TP129 Terminated at 0.8m**	
		2						

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP130**	
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED			
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580	
EQUIPMENT		LONGITUDE	153.5713128101	RL SURFACE		DATUM	56J
OPERATOR		LATITUDE	-28.3683560710	ASPECT		SLOPE	

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SM	FILL: Gravelly to silty SAND, grey, pale grey, medium grained, plastic to glass pieces.	No Odor , No Staining , No Anthropogenic Inclusions
			TP130/0.1-0.2	PID: 2.5				
			TP130/0.5-0.6	PID: 2.3				
		1					**TP130 Terminated at 0.9m**	
		2						

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP131**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5713861400	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3682226700	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SM	FILL: Gravelly to silty SAND, grey, pale grey, white, dark brown, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
			TP131/0.1-0.2	PID: 2.5				
			TP131/0.5-0.6	PID: 2.7				
		1					**TP131 Terminated at 0.8m**	
		2						

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP132**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5715813566	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3684701773	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SM	FILL: Gravelly to silty SAND, grey, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
			TP132/0.1-0.2	PID: 2.2				
			TP132/0.5-0.6	PID: 2.8				
		1					**TP132 Terminated at 0.7m**	
		2						

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP133**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5715516898	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3686719102	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A					SM	FILL: Gravelly to silty SAND, grey, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
			TP133/0.1-0.2	PID: 2.9				
			TP133/0.5-0.6	PID: 2.4				
		1					**TP133 Terminated at 0.8m**	
		2						

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited	COMMENCED	04/08/2024	COMPLETED		**REF TP134**
PROJECT	Detailed Site Investigation	LOGGED	TR	CHECKED		
SITE	87-89 Tweed Coast Road, Hastings Point	GEOLOGY		VEGETATION		PROJECT NO. P2108580
EQUIPMENT		LONGITUDE	153.5718454200	RL SURFACE		DATUM 56J
OPERATOR		LATITUDE	-28.3686958900	ASPECT		SLOPE

Method	Water	Depth (m)	Samples	PID Field Testing	Graphic Log	Classification Code	Material Description	Comments and Observations
Excavator	N/A		TP134/0.1-0.2	PID: 2.3		SM	FILL: Gravelly to silty SAND, dark grey brown, medium grained.	No Odor , No Staining , No Anthropogenic Inclusions
		1					**TP134 refusal at 0.2m (rocks/gravels)**	
		2						

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Engineering Log - TESTPIT

CLIENT	TriCare (Hastings) Limited		COMMENCED	18/10/2022	COMPLETED	18/10/2022	**REF BH105/MW05**
PROJECT	Monitoring Well Installation		LOGGED	RM	CHECKED		Sheet 1 OF 1
SITE	87 -89 Tweed Coast Road, Hastings Point		GEOLOGY	Quaternary	VEGETATION	Grass	PROJECT NO. P2108580
EQUIPMENT		4WD truck-mounted hydraulic drill rig	LONGITUDE	153.57133	RL SURFACE	3.91 m	DATUM AHD
EXCAVATION DIMENSIONS		4.50 m depth	LATITUDE	-28.3671	ASPECT	<2%	SLOPE NW

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS ID MW05 Static Water Level
AD/V			0.0	3.91				S	SAND: fine grained; pale grey / pale brown; trace silt			MW05
				0.25 3.66				S	SAND: fine grained; white / pale grey			Concrete
			0.5									Cuttings
			1.0									Bentonite
												Casing
			1.5	*1.50* 2.41				SM	Silty SAND: fine grained; brown, trace of organics			
WB			2.0	*2.00* 1.91				S	Indurated SAND: fine grained; brown			Sand
			2.5									
			3.0									Screen
			3.5									
			4.0									
			4.5	*4.50*					Hole Terminated at 4.50 m			

EXCAVATION LOG TO BE READ IN CONJUCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TEST

CLIENT	TriCare (Hastings) Limited		COMMENCED	18/10/2022	COMPLETED	18/10/2022	**REF BH106/MW06**
PROJECT	Monitoring Well Installation		LOGGED	RM	CHECKED		Sheet 1 OF 1
SITE	87 -89 Tweed Coast Road, Hastings Point		GEOLOGY	Quaternary	VEGETATION	Grass	PROJECT NO. P2108580
EQUIPMENT		4WD truck-mounted hydraulic drill rig	LONGITUDE	153.57176	RL SURFACE	4.47 m	DATUM AHD
EXCAVATION DIMENSIONS		5.00 m depth	LATITUDE	-28.3685	ASPECT	<2%	SLOPE NW

Drilling | **Sampling** | **Field Material Description**

METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS
			0	4.47				S	SAND: fine grained; grey / brown; with silt			ID MW06 Static Water Level
				0.40 4.07				S	SAND: fine grained; white / pale grey			
			0.5									
			1.0									
			1.5									
			2.0									
			2.5	*2.50* 1.97				S	SAND: fine grained; grey / brown			
			3.0									
			3.5	*3.50* 0.97				S	Indurated SAND: fine grained; brown			
			4.0									
			4.5									
			5.0	*5.00*					Hole Terminated at 5.00 m			

PIEZOMETER DETAILS: MW06 — Concrete; Cuttings; Casing; Bentonite; Screen; Sand

EXCAVATION LOG TO BE READ IN CONJUCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TEST

CLIENT	TriCare (Hastings) Limited		COMMENCED	18/10/2022	COMPLETED	18/10/2022	**REF BH109/MW09**
PROJECT	Monitoring Well Installation		LOGGED	RM	CHECKED		Sheet 1 OF 1
SITE	87 -89 Tweed Coast Road, Hastings Point		GEOLOGY	Quaternary	VEGETATION	Grass	PROJECT NO. P2108580
EQUIPMENT		4WD truck-mounted hydraulic drill rig	LONGITUDE	153.57191	RL SURFACE	5.69 m	DATUM AHD
EXCAVATION DIMENSIONS		6.00 m depth	LATITUDE	-28.36926	ASPECT	<2%	SLOPE NW

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS ID MW09 Static Water Level
			0	5.69				S	SAND: fine grained; brown / grey; with silt			Concrete
				0.15 5.54				S	SAND: fine grained; white / pale grey			Cuttings
			1									Casing
			2									Bentonite
			3									
			4									Screen
												Sand
			5	*5.00* 0.69				S	Indurated SAND			
			6	*6.00*					Hole Terminated at 6.00 m			

EXCAVATION LOG TO BE READ IN CONJUCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TEST

Appendix E – Field Documentation Records

Air-Met Scientific Pty Ltd

ABN 73 006 849 949

PO BOX 133, NUNAWADING 3131 VIC
P: 1300 137 067 W: www.airmet.com.au

Picking Slip

CUSTOMER DETAILS

Martens and Associates Pty Ltd
Suite 201, 20 George Street
Hornsby
NSW
2077

Telephone No: 02 9476 9999
Account No 203475

Issuing Depot:

Air-Met Scientific (Brisbane)
7/10 Hudson Road
Albion
QLD
4010

Tel: 1300 137 067
Fax: 07 3852 4911
E-Mail: hire.qld@airmet.com.au

CONTRACT NO: B020248

Date of Despatch: 29/07/2024
On Hire Date: 29/07/2024
Our Reference: Andrew Kneen
Customer Order No:
Proj. Stop Date: 01/08/2024
Proj. Return Date: 02/08/2024

SITE ADDRESS

Martens and Associates Pty Ltd
PU airmet Brisbane
7/10 Hudson Road
Albion
QLD
4010
Site Contact Name: Trystan Richards
Telephone No:

ITEM NO	DESCRIPTION	BIN LOCATION	QTY	QUANTITY PICKED	SERIAL NUMBER
5907	Geopump Series 2 Peristaltic Pump-F19002441		1		
11K100576	YSI Pro Plus Water Quality Meter		1		
348776	Solinst 122 Interface Meter 30 m (P8/LM3/30M)		1		
T-114180	Tiger PID Health and Safety Model / Data Logging PPB		1		
200052	1/4" (6.35mm) LDPE Tubing, ID 4.35m, Wall 1mm, Natural (100m/roll)		1		
JHS48953A	Silicon Tubing for Peristaltic Pump / Suits 1/4" OD Tubing (1 meter)		1		

SPECIAL INSTRUCTIONS:

Signature for and on behalf of **Air-Met Scientific (Brisbane)**

Name: _____

Date: _____

Signature _____ **Time:** _____

Multi Parameter Water Meter

airmet
Air-Met Scientific Pty Ltd

Instrument **YSI Quatro Pro Plus**
Serial No. **11K100576**

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. COND	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode Aspirated mode

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.00		413995	pH 7.01
2. pH 4.00		pH 4.00		414104	pH 4.01
3. ORP		230.3mV		418135/418134	230.3mV
4. EC		2760uS		414103	2761uS
5. D.O		100%		water	99.0% - 753.0mmHg
6. Temp		24.4oC		MultiTherm	24.4oC

Calibrated by: **Noel Vaikath**

Calibration date: **19-Jul-24**

Next calibration due: **19-Jan-25**

PID Calibration Certificate

Instrument PhoCheck Tiger
Serial No. T-114174

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	PID	✓	10.6 ev
Alarms	Beeper	✓	**Low** | **High** | **TWA** | **STEL**
	Settings	✓	50ppm | 100ppm | N/A | N/A
Software	Version	✓	
Data logger	Operation	✓	
Download	Operation	✓	
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		100 ppm Isobutylene	NIST	BR245		100 ppm

Calibrated by: **Noel Vaikath**

Calibration date: **26/07/2024**

Next calibration due: **25/08/2024**

WATER SAMPLING RECORD FORM

martens
consulting engineers since 1989

PROJECT INFORMATION

PROJECT NUMBER: 8580

CLIENT: Tricare

SITE LOCATION: 87-89 Tweed Coast Road, Hastings Point, NSW

DATE: ~~19/8~~ 1 August, 2024

SAMPLED BY: TH

WATER SAMPLING FIELD PARAMETERS

Bore / Location ID	Time	Depth to Water (TOC)	Temp (°C)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L - % Sat)	EC ~~uS/CM~~ - mS/cm	TDS ~~-~~ / ~~Turbidity~~ (ntu)	Appearance (colour, turbidity, odour, etc)	Samples Collected
MW06		2.82	20.8	~~5.56~~	133.7	4.95	109.9	78.65	generally Clear / No odour / No sheen	MW06
	*	Sampled after stabalisation and ≥ 10L purge.								
MW05		2.02	20.2	5.13	-88.5	0.46	152.0	108.55	generally Clear / No odour / No sheen	MW05
	~~*~~	Sampled after stabilisation and ≥ 10L purge.								
MW09		3.68	21.1	~~5.89~~	-7.6	0.45	103.6	71.30	generally clear / No odour / No sheen	MW09
	~~*~~	Sampled after stabalisation and ≥ 10L purge.								

Sample bottle codes: P-plastic, G - glass, V - vial

Preservation Codes - U - unpreserved, S -sulfuric acid, N - nitric acid, H - hydrochloric acid

OBSERVATIONS

Weather conditions:

Temperature:.....

Precipitation:.....

Appendix F – Data Quality Assessment

Data Quality Assessment

An assessment of the quality of data acquired by the investigation, compared against the designated investigation data quality indicators (DQI) defined in Section 5.2, is provided in the table below.

Completeness			
Field Considerations	***Target***	***Result***	***Pass | Fail | Comment***
Critical locations in SAQP sampled?	Yes	Yes	Pass
Critical samples in SAQP collected?	Yes	Yes	Pass
Sampling methods and equipment in SAQP used and complied with?	Yes	Yes	Pass
Sampling by experienced environmental consultant(s)?	Yes	Yes	Pass
Field documentation complete? (i.e., test location logs, field records, calibration records, etc.)	Yes	Yes	Pass Test pit and groundwater construction logs are provided in Appendix D. Field documentation and calibration records are provided in Appendix E.
Chain of Custody (COC) complete?	Yes	Yes	Pass
Laboratory Considerations	***Target***	***Result***	***Pass | Fail | Comment***
Critical samples analysed according to SAQP?	Yes	Yes	Pass
Analysis of samples for COPC according to SAQP?	Yes	Yes	Pass
Appropriate laboratory analytical methods and LOR used by laboratory?	Yes	Yes	Pass
Sample Receipt Advice and COC complete?	Yes	Yes	Pass Documentation provided in Appendix I – COC and Sample Receipt
Sample extraction and holding times complied with?	Yes	Yes	Pass
Comparability			
Field Considerations	***Target***	***Result***	***Pass | Fail | Comment***
Same SAQP used on each occasion?	Yes	Yes	Pass
Sampling by same environmental consultant(s)?	Yes	Yes	Pass
Climatic conditions conducive for sampling?	Yes	Yes	Pass
Same types of samples collected, handled, and preserved in same manner?	Yes	Yes	Pass

Laboratory Considerations	***Target***	***Result***	***Pass | Fail | Comment***
Same laboratory used for primary sample analysis?	Yes	Yes	Pass
Same analytical methods used by primary laboratory?	Yes	Yes	Pass
Same LOR adopted by primary laboratory?	Yes	Yes	Pass
Same analytical measurement units adopted?	Yes	Yes	Pass
Representativeness			
Field Considerations	***Target***	***Result***	***Pass | Fail | Comment***
Media sampled according to SAQP?	Yes	Yes	Pass
All media identified in SAQP sampled?	Yes	Yes	Pass
Laboratory Considerations	***Target***	***Result***	***Pass | Fail | Comment***
Samples analysed according to SAQP?	Yes	Yes	Pass
Precision			
Field Considerations	***Target***	***Result***	***Pass | Fail | Comment***
SAQP used and complied with?	Yes	Yes	Pass
Min. 10% intra laboratory duplicates collected and analysed?	Yes	Yes	Pass One duplicate (inter-laboratory) was collected and analysed by ALS.
RPD (%) values within acceptance limits? • No limit for analytical results <10 x LOR • 50% for analytical results 10-30 x LOR • 30% for analytical results >30 x LOR	Yes	No	RPD calculations between blind and inter-laboratory field duplicates and parent samples were generally acceptable for organics and metals, except for copper which exceeded acceptance limits of 50% in one sample. While these results indicate some minor heterogeneity of this metal in fill material, concentrations reported are generally low, well below SAC, and consistent with low concentrations reported for other COPC in fill. As such, the data is considered suitably usable for interpretation of land contamination risks at the Site.

Laboratory Considerations	***Target***	***Result***	***Pass | Fail | Comment***
Laboratory duplicates within acceptance limits?	Yes	No	Comment Laboratory RPD acceptance limits were generally acceptable for organics and metal analytes; however, an exceedance of RPD acceptance limits was reported for copper in soil. A subsequent triplicate analytical result issued by the laboratory for the subject sample provided a RPD value within acceptance limits. While this this information indicated some contaminant heterogeneity in fil, the concentrations are generally low and well below SAC. As such, the data is considered suitable for the interpretation of land contamination risks at the Site.
Accuracy			
Field Considerations	***Target***	***Result***	***Pass | Fail | Comment***
Trip spike(s) used and analysed? (Recoveries between 60% and 140%)	Yes	Yes	Pass
Trip blank(s) used and analysed? (Analyte concentration below LOR)	Yes	Yes	Pass
Equipment rinsate(s) collected and analysed? (Analyte concentration below LOR)	Yes	-	-
Laboratory Considerations	***Target***	***Result***	***Pass | Fail | Comment***
Laboratory method blank(s) within acceptable limits?	Yes	Yes	Pass
Matrix spike recovery within acceptable limits?	Yes	Yes	Pass
Surrogate spike recovery within acceptable limits?	Yes	Yes	Pass
Laboratory control sample recovery within acceptable limits?	Yes	Yes	Pass

Field Duplicates (intra- and inter-laboratory)

				Metals							
				Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				4	0.4	1	1	1	0.1	1	1
Lab Report Number	**Field ID**	**Matrix Type**	**Date**								
358235 (Envirolab)	**8580/TP102/0.1-0.2**	**Soil**	**31 Jul 2024**	<4	<0.4	2	1	<1	<0.1	<1	2
358235 (Envirolab)	**DUP01**	**Soil**	**31 Jul 2024**	<4	<0.4	2	1	<1	<0.1	<1	3
RPD				0	0	0	0	0	0	0	40
358235 (Envirolab)	**8580/TP108/0.1-0.2**	**Soil**	**31 Jul 2024**	<4	<0.4	9	25	3	<0.1	<1	12
358235 (Envirolab)	**DUP02**	**Soil**	**31 Jul 2024**	<4	<0.4	6	35	3	<0.1	1	17
RPD				0	0	40	33	0	0	0	34
358235 (Envirolab)	**8580/TP119/0.1-0.2**	**Soil**	**31 Jul 2024**	<4	<0.4	4	5	2	<0.1	<1	2
ES2425438 (ALS)	**DUP03**	**Soil**	**31 Jul 2024**	<5	<1	3	<5	<5	<0.1	<2	<5
RPD				0	0	29	0	0	0	0	0

***RPDs have only been considered where a concentration is greater than 1 times the EQL.**

****Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: No limit (1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (>30 x EQL))**

*****Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory**

Appendix G - Summary Laboratory Results Tables

				Metals								BTEXN					TRH					
				Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene Total	Naphthalene	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				4	0.4	1	1	1	0.1	1	1	0.2	0.5	1	1	1	25	25	50	50	100	100
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																	700		1,000		2,500	10,000
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand												0.5 | 0.5 | 0.5 | 0.5	160 | 220 | 310 | 540	55	40 | 60 | 95 | 170	3		45 | 70 | 110 | 200		110 | 240 | 440		
NEPM 2013 Table 1B(5) Site Specific EIL - Urban Res & Public Open Space				100		198	35	1,100		6	140					170						
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil												50	85	70	105			180	120	120	300	2,800
NEPM 2013 Table 1A(1) HILs Res A Soil				100	20		6,000	300	40	400	7,400											
Field ID	**Date**	**Depth**	**Soil Type**																			
8580/TP101/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	<1	<1	<1	<0.1	<1	<1	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP102/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	2	1	<1	<0.1	<1	2	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP103/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	9	9	3	<0.1	1	36	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP104/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	13	2	1	<0.1	<1	1	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP105/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	3	4	3	<0.1	<1	2	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP106/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	<1	1	<1	<0.1	<1	<1	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP107/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	2	1	<1	<0.1	<1	18	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP108/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	9	25	3	<0.1	<1	12	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP109/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	3	3	4	<0.1	2	23	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP110/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	4	9	5	<0.1	1	10	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP111/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	3	13	5	<0.1	1	7	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP112/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	1	2	2	<0.1	<1	5	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP113/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	5	3	1	<0.1	<1	7	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP114/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	2	7	3	<0.1	<1	7	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP115/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	4	12	6	<0.1	3	54	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP116/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	7	<0.4	5	8	4	<0.1	3	37	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	130
8580/TP117/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	4	11	14	<0.1	2	22	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP119/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	4	5	2	<0.1	<1	2	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	140
8580/TP120/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - sandy gravel**	<4	<0.4	1	2	1	<0.1	<1	5	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP121/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - sandy gravel**	<4	<0.4	2	10	6	<0.1	<1	7	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP122/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - gravelly clay**	7	<0.4	2	17	27	<0.1	1	18	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP123/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - gravelly clay**	6	<0.4	3	10	12	<0.1	<1	11	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP124/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	2	4	3	<0.1	<1	25	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP125/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - gravelly clay**	5	<0.4	2	30	8	<0.1	2	8	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP126/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - gravelly clay**	<4	<0.4	4	13	4	<0.1	<1	7	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP127/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	1	2	<1	<0.1	<1	3	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP128/0.0-0.1	**31 Jul 2024**	**0 - 0.1**	**Fill - sandy gravel**	<4	<0.4	4	14	4	<0.1	3	21	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP129/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	2	3	1	<0.1	1	24	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP130/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	2	75	2	<0.1	<1	18	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP133/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<4	<0.4	2	12	2	<0.1	<1	32	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
8580/TP134/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - sandy gravel**	<4	<0.4	3	9	5	<0.1	2	22	<0.2	<0.5	<1	<1	<1	<25	<25	<50	<50	<100	<100
TRIP BLANK	**31 Jul 2024**	**-**	**Soil blank**	-	-	-	-	-	-	-	-	-	-	-	-	<1	<25	<25	<50	<50	<100	<100

Statistics

Number of Results				**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**
Number of Detects				**4**	**0**	**29**	**30**	**26**	**0**	**12**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
Minimum Concentration				**<4**	**<0.4**	**1**	**1**	**1**	**<0.1**	**1**	**1**	**<0.2**	**<0.5**	**<1**	**<1**	**<1**	**<25**	**<25**	**<50**	**<50**	**<100**	**<100**
Maximum Concentration				**7**	**<0.4**	**13**	**75**	**27**	**<0.1**	**3**	**54**	**<0.2**	**<0.5**	**<1**	**<1**	**<1**	**<25**	**<25**	**<50**	**<50**	**<100**	**140**

Environmental Standards

NEPM, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil
2013, NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Res A Soil
Chromium EIL calculation - ACL using clay content of 1%, ABC using old suburb / low traffic
Copper EIL - ACL calculated using CEC of 5 cmolc/kg, ABC using old suburb / low traffic
Lead EIL - calculated using generic ACL and ABC using old suburb / low traffic
Nickel EIL - ACL calculated using CEC of 5 cmolc/kg, ABC using old suburb / low traffic
Zinc EIL - ACL calculated using CEC of 5 cmolc/kg and pH 6, ABC using old suburb / low traffic

				PAH				Organochlorine Pesticides										
				Benzo(a) pyrene	Naphthalene	Benzo(a)pyrene TEQ	Total PAH	Aldrin + Dieldrin	BHC (total)	Chlordane (total)	DDT	DDT+DDE+DDD	Endosulfan (total)	Endrin	Heptachlor (total)	Methoxychlor	Hexachlorobenzene	Mirex
				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
EQL				0.05	0.1	0.5	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																		
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand					3													
NEPM 2013 Table 1B(5) Site Specific EIL - Urban Res & Public Open Space					170						180							
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil				33														
NEPM 2013 Table 1A(1) HILs Res A Soil						3	300	6				240		10	6	300	10	10
Field ID	**Date**	**Depth**	**Soil Type**															
8580/TP101/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP102/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP103/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP104/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP105/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP106/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP107/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP108/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP109/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP110/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP111/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP112/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP113/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP114/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP115/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP116/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP117/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP119/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP120/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - sandy gravel**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP121/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - sandy gravel**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP122/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - gravelly clay**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP123/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - gravelly clay**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP124/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP125/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - gravelly clay**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP126/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - gravelly clay**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP127/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP128/0.0-0.1	**31 Jul 2024**	**0 - 0.1**	**Fill - sandy gravel**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP129/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP130/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP133/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8580/TP134/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - sandy gravel**	<0.05	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRIP BLANK	**31 Jul 2024**	**-**	**Soil blank**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Statistics

Number of Results				**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**
Number of Detects				**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration				**<0.05**	**<0.1**	**<0.5**	**<0.05**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**
Maximum Concentration				**<0.05**	**<0.1**	**<0.5**	**<0.05**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**

Environmental Standards

NEPM, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil
2013, NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Res A Soil
Chromium EIL calculation - ACL using clay content of 1%, ABC using old suburb / low traffic
Copper EIL - ACL calculated using CEC of 5 cmolc/kg, ABC using old suburb / low traffic
Lead EIL - calculated using generic ACL and ABC using old suburb / low traffic
Nickel EIL - ACL calculated using CEC of 5 cmolc/kg, ABC using old suburb / low traffic
Zinc EIL - ACL calculated using CEC of 5 cmolc/kg and pH 6, ABC using old suburb / low traffic

				Organophosphorous Pesticides																		PCB	Asbestos
				Azinophos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Fenitrothion	Fenthion	Malathion	Methidathion	Methyl parathion	Mevinphos (Phosdrin)	Phorate	Ronnel	PCB (total)	Asbestos fibres
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Detect
EQL				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																							
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand																							Detect
NEPM 2013 Table 1B(5) Site Specific EIL - Urban Res & Public Open Space																							
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																							
NEPM 2013 Table 1A(1) HILs Res A Soil						160																1	
Field ID	**Date**	**Depth**	**Soil Type**																				
8580/TP101/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP102/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP103/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP104/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP105/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP106/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP107/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP108/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP109/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP110/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP111/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP112/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP113/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP114/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP115/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP116/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP117/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP119/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP120/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - sandy gravel**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP121/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - sandy gravel**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP122/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - gravelly clay**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP123/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - gravelly clay**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP124/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP125/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - gravelly clay**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP126/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - gravelly clay**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP127/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP128/0.0-0.1	**31 Jul 2024**	**0 - 0.1**	**Fill - sandy gravel**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP129/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP130/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP133/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - silty sand**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
8580/TP134/0.1-0.2	**31 Jul 2024**	**0.1 - 0.2**	**Fill - sandy gravel**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not detected
TRIP BLANK	**31 Jul 2024**	**-**	**Soil blank**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Statistics

Number of Results				**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**
Number of Detects				**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration				**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	-
Maximum Concentration				**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	-

Environmental Standards

NEPM, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil
2013, NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Res A Soil
Chromium EIL calculation - ACL using clay content of 1%, ABC using old suburb / low traffic
Copper EIL - ACL calculated using CEC of 5 cmolc/kg, ABC using old suburb / low traffic
Lead EIL - calculated using generic ACL and ABC using old suburb / low traffic
Nickel EIL - ACL calculated using CEC of 5 cmolc/kg, ABC using old suburb / low traffic
Zinc EIL - ACL calculated using CEC of 5 cmolc/kg and pH 6, ABC using old suburb / low traffic

					Field ID	8580/MW05	8580/MW06	8580/MW09	Trip Blank	Number of Results	Number of Detects	Minimum Conc.	Maximum Conc.
					Date	01 Aug 2024	01 Aug 2024	01 Aug 2024	01 Aug 2024				
	Unit	EQL	ADWG 2022 Health x 10	ANZG Marine Water Toxicant DGVs LOSP 95% (July 2023)									
Metals													
Arsenic	mg/L	0.001	0.1			0.005	0.002	0.004	-	3	3	0.001	0.005
Cadmium	mg/L	0.0001	0.02	0.0055		<0.0001	<0.0001	<0.0001	-	4	0	<0.0001	<0.0001
Chromium (III+VI)	mg/L	0.001		0.0044 (as Cr VI)		0.004	0.005	0.008	-	4	3	0.004	0.008
Copper	mg/L	0.001	20	0.0013		0.003	0.004	0.006	-	4	3	0.003	0.006
Lead	mg/L	0.001	0.1	0.0044		<0.001	0.002	0.003	-	4	2	<0.001	0.004
Mercury	mg/L	0.00005	0.01	0.0004		<0.00005	0.0004	0.0004	-	4	2	<0.00005	0.0004
Nickel	mg/L	0.001	0.2	0.07		0.003	0.032	0.005	-	4	3	0.001	0.032
Zinc	mg/L	0.001		0.008		0.007	0.012	0.018	-	4	2	0.007	0.018
BTEX													
Naphthalene (VOC)	mg/L	0.001		0.07		<0.001	<0.001	<0.001	-	3	0	<0.001	<0.001
Benzene	µg/L	1	10	700		<1	<1	<1	-	3	0	<1	<1
Toluene	µg/L	1	8000	180		<1	<1	<1	-	3	0	<1	<1
Ethylbenzene	µg/L	1	3000	80		<1	<1	<1	-	3	0	<1	<1
Xylene (m & p)	µg/L	2	6	75		<2	<2	<2	-	3	0	<2	<2
Xylene (o)	µg/L	1				<1	<1	<1	-	3	0	<1	<1
TRH													
C6-C10 (F1 minus BTEX)	µg/L	10				<10	<10	<10	-	3	0	<10	<10
>C10-C16 Fraction (F2 minus Naphthalene)	µg/L	50				<50	<50	<50	-	3	0	<50	<50
>C16-C34 Fraction (F3)	µg/L	100				<100	<100	<100	-	3	0	<100	<100
>C34-C40 Fraction (F4)	µg/L	100				<100	<100	<100	-	3	0	<100	<100
PAH													
Benzo(a) pyrene	µg/L	0.1	0.1	0.2		<0.1	<0.1	<0.1	-	3	0	<0.1	<0.1
Naphthalene	µg/L	0.1		70		<0.1	<0.1	<0.1	-	3	0	<0.1	<0.1
Benzo(a)pyrene TEQ	mg/L	0.0005				<0.0005	<0.0005	<0.0005	-	3	0	<0.0005	<0.0005
PAHs (Sum of positives)	mg/L	0.0001				<0.0001	<0.0001	<0.0001	-	3	0	<0.0001	<0.0001
Organochlorine Pesticides													
4,4-DDE	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
a-BHC	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Aldrin	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
b-BHC	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Chlordane (cis)	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Chlordane (trans)	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
d-BHC	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
DDD	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
DDT	µg/L	0.2	90			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Dieldrin	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Endosulfan I	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Endosulfan II	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Endosulfan sulphate	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Endrin	µg/L	0.2		0.008		<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Endrin aldehyde	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
g-BHC (Lindane)	µg/L	0.2	100			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Heptachlor	µg/L	0.2	3			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Heptachlor epoxide	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Methoxychlor	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Halogenated Benzenes													
Hexachlorobenzene	µg/L	0.2		0.1		<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Other													
Phosalone	mg/L	0.0002				<0.0002	<0.0002	<0.0002	-	3	0	<0.0002	<0.0002
Pesticides													
Fenamiphos	µg/L	0.2	5			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Mirex	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Parathion	µg/L	0.2	200			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Organophosphorous Pesticides													
Azinophos methyl	µg/L	0.2	300			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Bromophos-ethyl	µg/L	0.2	100			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Chlorpyrifos	µg/L	0.2	100	0.009		<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Chlorpyrifos-methyl	mg/L	0.0002				<0.0002	<0.0002	<0.0002	-	3	0	<0.0002	<0.0002
Coumaphos	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Diazinon	µg/L	0.2	40			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Dichlorvos	µg/L	0.2	50			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Dimethoate	µg/L	0.2	70			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Disulfoton	µg/L	0.2	40			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Ethion	µg/L	0.2	40			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Fenitrothion	µg/L	0.2	70			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Fenthion	µg/L	0.2	70			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Malathion	µg/L	0.2	700			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Methidathion	µg/L	0.2	60			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Methyl parathion	µg/L	0.2	7			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Mevinphos (Phosdrin)	µg/L	0.2	50			<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Phorate	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
Ronnel	µg/L	0.2				<0.2	<0.2	<0.2	-	3	0	<0.2	<0.2
PCBs													
Arochlor 1016	µg/L	2				<2	<2	<2	-	3	0	<2	<2
Arochlor 1221	µg/L	2				<2	<2	<2	-	3	0	<2	<2
Arochlor 1232	µg/L	2				<2	<2	<2	-	3	0	<2	<2
Arochlor 1242	µg/L	2				<2	<2	<2	-	3	0	<2	<2
Arochlor 1248	µg/L	2				<2	<2	<2	-	3	0	<2	<2
Arochlor 1254	µg/L	2				<2	<2	<2	-	3	0	<2	<2
Arochlor 1260	µg/L	2				<2	<2	<2	-	3	0	<2	<2

Environmental Standards
NHMRC, May 2022, ADWG 2022 Health
ANZG, July 2023, ANZG Marine Water Toxicant DGVs LOSP 95% (July 2023)

Appendix H – Laboratory Analytical Documentation

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 358235

Client Details

Client	Martens & Associates Pty Ltd
Attention	Trystan Richards
Address	Suite 201, 20 George St, Hornsby, NSW, 2077

Sample Details

Your Reference	**P2108580: 87-89 Tweed Coast Road, Hastings Point**
Number of Samples	104 Soil
Date samples received	02/08/2024
Date completed instructions received	02/08/2024

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	09/08/2024
Date of Issue	09/08/2024

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Asbestos Approved By
Analysed by Asbestos Approved Analyst: Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Jenny He, Senior Chemist
Lucy Zhu, Asbestos Supervisor
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		358235-1	358235-4	358235-7	358235-11	358235-14
Your Reference	UNITS	8580/TP101/0.1-0.2	8580/TP102/0.1-0.2	8580/TP103/0.1-0.2	8580/TP104/0.1-0.2	8580/TP105/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	09/08/2024	09/08/2024	09/08/2024	09/08/2024	09/08/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	87	78	74	75	83

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		358235-17	358235-21	358235-24	358235-29	358235-33
Your Reference	UNITS	8580/TP106/0.1-0.2	8580/TP107/0.1-0.2	8580/TP108/0.1-0.2	8580/TP109/0.1-0.2	8580/TP110/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	09/08/2024	09/08/2024	09/08/2024	09/08/2024	09/08/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	82	89	85	78	80

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		358235-36	358235-38	358235-42	358235-46	358235-49
Your Reference	UNITS	8580/TP111/0.1-0.2	8580/TP112/0.1-0.2	8580/TP113/0.1-0.2	8580/TP114/0.1-0.2	8580/TP115/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	09/08/2024	09/08/2024	09/08/2024	09/08/2024	09/08/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	80	84	82	82	77

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		358235-52	358235-54	358235-60	358235-64	358235-67
Your Reference	UNITS	8580/TP116/0.1-0.2	8580/TP117/0.1-0.2	8580/TP119/0.1-0.2	8580/TP120/0.1-0.2	8580/TP121/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	09/08/2024	09/08/2024	09/08/2024	09/08/2024	09/08/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	98	88	97	82	78

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		358235-70	358235-73	358235-76	358235-79	358235-82
Your Reference	UNITS	8580/TP122/0.1-0.2	8580/TP123/0.1-0.2	8580/TP124/0.1-0.2	8580/TP125/0.1-0.2	8580/TP126/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	09/08/2024	09/08/2024	09/08/2024	09/08/2024	09/08/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	78	78	90	82	77

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		358235-85	358235-87	358235-88	358235-90	358235-96
Your Reference	UNITS	8580/TP127/0.1-0.2	8580/TP128/0.0-0.1	8580/TP129/0.1-0.2	8580/TP130/0.1-0.2	8580/TP133/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	09/08/2024	09/08/2024	09/08/2024	09/08/2024	09/08/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	86	81	85	88	88

vTRH(C6-C10)/BTEXN in Soil				
Our Reference		358235-98	358235-103	358235-104
Your Reference	UNITS	8580/TP134/0.1-0.2	TRIP SPIKE	TRIP BLANK
Date Sampled		31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	09/08/2024	09/08/2024	09/08/2024
TRH C_6 - C_9	mg/kg	<25	[NA]	<25
TRH C_6 - C_{10}	mg/kg	<25	[NA]	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	[NA]	<25
Benzene	mg/kg	<0.2	101%	[NA]
Toluene	mg/kg	<0.5	104%	[NA]
Ethylbenzene	mg/kg	<1	103%	[NA]
m+p-xylene	mg/kg	<2	104%	[NA]
o-Xylene	mg/kg	<1	102%	[NA]
Naphthalene	mg/kg	<1	[NT]	<1
Total +ve Xylenes	mg/kg	<1	[NA]	[NA]
Surrogate aaa-Trifluorotoluene	%	81	102	86

svTRH (C10-C40) in Soil						
Our Reference		358235-1	358235-4	358235-7	358235-11	358235-14
Your Reference	UNITS	8580/TP101/0.1-0.2	8580/TP102/0.1-0.2	8580/TP103/0.1-0.2	8580/TP104/0.1-0.2	8580/TP105/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	90	70	101	107	77

svTRH (C10-C40) in Soil						
Our Reference		358235-17	358235-21	358235-24	358235-29	358235-33
Your Reference	UNITS	8580/TP106/0.1-0.2	8580/TP107/0.1-0.2	8580/TP108/0.1-0.2	8580/TP109/0.1-0.2	8580/TP110/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	68	68	99	98	96

svTRH (C10-C40) in Soil						
Our Reference		358235-36	358235-38	358235-42	358235-46	358235-49
Your Reference	UNITS	8580/TP111/0.1-0.2	8580/TP112/0.1-0.2	8580/TP113/0.1-0.2	8580/TP114/0.1-0.2	8580/TP115/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	06/08/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	66	75	78	97	81

svTRH (C10-C40) in Soil						
Our Reference		358235-52	358235-54	358235-60	358235-64	358235-67
Your Reference	UNITS	8580/TP116/0.1-0.2	8580/TP117/0.1-0.2	8580/TP119/0.1-0.2	8580/TP120/0.1-0.2	8580/TP121/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	130	<100	140	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	130	<50	140	<50	<50
Surrogate o-Terphenyl	%	93	96	80	90	67

svTRH (C10-C40) in Soil						
Our Reference		358235-70	358235-73	358235-76	358235-79	358235-82
Your Reference	UNITS	8580/TP122/0.1-0.2	8580/TP123/0.1-0.2	8580/TP124/0.1-0.2	8580/TP125/0.1-0.2	8580/TP126/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	67	69	67	68	65

svTRH (C10-C40) in Soil						
Our Reference		358235-85	358235-87	358235-88	358235-90	358235-96
Your Reference	UNITS	8580/TP127/0.1-0.2	8580/TP128/0.0-0.1	8580/TP129/0.1-0.2	8580/TP130/0.1-0.2	8580/TP133/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	64	69	65	75	65

svTRH (C10-C40) in Soil			
Our Reference		358235-98	358235-104
Your Reference	UNITS	8580/TP134/0.1-0.2	TRIP BLANK
Date Sampled		31/07/2024	31/07/2024
Type of sample		Soil	Soil
Date extracted	-	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	97	91

PAHs in Soil						
Our Reference		358235-1	358235-4	358235-7	358235-11	358235-14
Your Reference	UNITS	8580/TP101/0.1-0.2	8580/TP102/0.1-0.2	8580/TP103/0.1-0.2	8580/TP104/0.1-0.2	8580/TP105/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	92	84	118	120	92

PAHs in Soil						
Our Reference		358235-17	358235-21	358235-24	358235-29	358235-33
Your Reference	UNITS	8580/TP106/0.1-0.2	8580/TP107/0.1-0.2	8580/TP108/0.1-0.2	8580/TP109/0.1-0.2	8580/TP110/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	87	83	109	104	99

PAHs in Soil						
Our Reference		358235-36	358235-38	358235-42	358235-46	358235-49
Your Reference	UNITS	8580/TP111/0.1-0.2	8580/TP112/0.1-0.2	8580/TP113/0.1-0.2	8580/TP114/0.1-0.2	8580/TP115/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	104	96	80	109	105

PAHs in Soil						
Our Reference		358235-52	358235-54	358235-60	358235-64	358235-67
Your Reference	UNITS	8580/TP116/0.1-0.2	8580/TP117/0.1-0.2	8580/TP119/0.1-0.2	8580/TP120/0.1-0.2	8580/TP121/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	104	99	82	80	86

PAHs in Soil						
Our Reference		358235-70	358235-73	358235-76	358235-79	358235-82
Your Reference	UNITS	8580/TP122/0.1-0.2	8580/TP123/0.1-0.2	8580/TP124/0.1-0.2	8580/TP125/0.1-0.2	8580/TP126/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	84	91	87	82	84

PAHs in Soil						
Our Reference		358235-85	358235-87	358235-88	358235-90	358235-96
Your Reference	UNITS	8580/TP127/0.1-0.2	8580/TP128/0.0-0.1	8580/TP129/0.1-0.2	8580/TP130/0.1-0.2	8580/TP133/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	85	87	77	91	79

PAHs in Soil		
Our Reference		358235-98
Your Reference	UNITS	8580/TP134/0.1-0.2
Date Sampled		31/07/2024
Type of sample		Soil
Date extracted	-	05/08/2024
Date analysed	-	06/08/2024
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	89

Organochlorine Pesticides in soil						
Our Reference		358235-1	358235-4	358235-7	358235-11	358235-14
Your Reference	UNITS	8580/TP101/0.1-0.2	8580/TP102/0.1-0.2	8580/TP103/0.1-0.2	8580/TP104/0.1-0.2	8580/TP105/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	62	65	88	90	67
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Organochlorine Pesticides in soil						
Our Reference		358235-17	358235-21	358235-24	358235-29	358235-33
Your Reference	UNITS	8580/TP106/0.1-0.2	8580/TP107/0.1-0.2	8580/TP108/0.1-0.2	8580/TP109/0.1-0.2	8580/TP110/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	67	67	94	91	87
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Organochlorine Pesticides in soil						
Our Reference		358235-36	358235-38	358235-42	358235-46	358235-49
Your Reference	UNITS	8580/TP111/0.1-0.2	8580/TP112/0.1-0.2	8580/TP113/0.1-0.2	8580/TP114/0.1-0.2	8580/TP115/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	64	67	64	90	92
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Organochlorine Pesticides in soil						
Our Reference		358235-52	358235-54	358235-60	358235-64	358235-67
Your Reference	UNITS	8580/TP116/0.1-0.2	8580/TP117/0.1-0.2	8580/TP119/0.1-0.2	8580/TP120/0.1-0.2	8580/TP121/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	95	98	70	69	65
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Organochlorine Pesticides in soil						
Our Reference		358235-70	358235-73	358235-76	358235-79	358235-82
Your Reference	UNITS	8580/TP122/0.1-0.2	8580/TP123/0.1-0.2	8580/TP124/0.1-0.2	8580/TP125/0.1-0.2	8580/TP126/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	69	72	69	66	66
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Organochlorine Pesticides in soil						
Our Reference		358235-85	358235-87	358235-88	358235-90	358235-96
Your Reference	UNITS	8580/TP127/0.1-0.2	8580/TP128/0.0-0.1	8580/TP129/0.1-0.2	8580/TP130/0.1-0.2	8580/TP133/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	64	69	70	73	74
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Organochlorine Pesticides in soil		
Our Reference		358235-98
Your Reference	UNITS	8580/TP134/0.1-0.2
Date Sampled		31/07/2024
Type of sample		Soil
Date extracted	-	05/08/2024
Date analysed	-	06/08/2024
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Mirex	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate 4-Chloro-3-NBTF	%	75
Total Positive Aldrin+Dieldrin	mg/kg	<0.1

Organophosphorus Pesticides in Soil						
Our Reference		358235-1	358235-4	358235-7	358235-11	358235-14
Your Reference	UNITS	8580/TP101/0.1-0.2	8580/TP102/0.1-0.2	8580/TP103/0.1-0.2	8580/TP104/0.1-0.2	8580/TP105/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	62	65	88	90	67

Organophosphorus Pesticides in Soil						
Our Reference		358235-17	358235-21	358235-24	358235-29	358235-33
Your Reference	UNITS	8580/TP106/0.1-0.2	8580/TP107/0.1-0.2	8580/TP108/0.1-0.2	8580/TP109/0.1-0.2	8580/TP110/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	67	67	94	91	87

Organophosphorus Pesticides in Soil						
Our Reference		358235-36	358235-38	358235-42	358235-46	358235-49
Your Reference	UNITS	8580/TP111/0.1-0.2	8580/TP112/0.1-0.2	8580/TP113/0.1-0.2	8580/TP114/0.1-0.2	8580/TP115/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	64	67	64	90	92

Organophosphorus Pesticides in Soil						
Our Reference		358235-52	358235-54	358235-60	358235-64	358235-67
Your Reference	UNITS	8580/TP116/0.1-0.2	8580/TP117/0.1-0.2	8580/TP119/0.1-0.2	8580/TP120/0.1-0.2	8580/TP121/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	95	98	70	69	65

Organophosphorus Pesticides in Soil						
Our Reference		358235-70	358235-73	358235-76	358235-79	358235-82
Your Reference	UNITS	8580/TP122/0.1-0.2	8580/TP123/0.1-0.2	8580/TP124/0.1-0.2	8580/TP125/0.1-0.2	8580/TP126/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	69	72	69	66	66

Organophosphorus Pesticides in Soil						
Our Reference		358235-85	358235-87	358235-88	358235-90	358235-96
Your Reference	UNITS	8580/TP127/0.1-0.2	8580/TP128/0.0-0.1	8580/TP129/0.1-0.2	8580/TP130/0.1-0.2	8580/TP133/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	64	69	70	73	74

Organophosphorus Pesticides in Soil		
Our Reference		358235-98
Your Reference	UNITS	8580/TP134/0.1-0.2
Date Sampled		31/07/2024
Type of sample		Soil
Date extracted	-	05/08/2024
Date analysed	-	06/08/2024
Dichlorvos	mg/kg	<0.1
Mevinphos	mg/kg	<0.1
Phorate	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Disulfoton	mg/kg	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1
Parathion-Methyl	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Fenthion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Methidathion	mg/kg	<0.1
Fenamiphos	mg/kg	<0.1
Ethion	mg/kg	<0.1
Phosalone	mg/kg	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1
Coumaphos	mg/kg	<0.1
Surrogate 4-Chloro-3-NBTF	%	75

PCBs in Soil						
Our Reference		358235-1	358235-4	358235-7	358235-11	358235-14
Your Reference	UNITS	8580/TP101/0.1-0.2	8580/TP102/0.1-0.2	8580/TP103/0.1-0.2	8580/TP104/0.1-0.2	8580/TP105/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	71	78	91	93	74

PCBs in Soil						
Our Reference		358235-17	358235-21	358235-24	358235-29	358235-33
Your Reference	UNITS	8580/TP106/0.1-0.2	8580/TP107/0.1-0.2	8580/TP108/0.1-0.2	8580/TP109/0.1-0.2	8580/TP110/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	69	72	107	99	86

PCBs in Soil						
Our Reference		358235-36	358235-38	358235-42	358235-46	358235-49
Your Reference	UNITS	8580/TP111/0.1-0.2	8580/TP112/0.1-0.2	8580/TP113/0.1-0.2	8580/TP114/0.1-0.2	8580/TP115/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	64	65	65	103	88

PCBs in Soil						
Our Reference		358235-52	358235-54	358235-60	358235-64	358235-67
Your Reference	UNITS	8580/TP116/0.1-0.2	8580/TP117/0.1-0.2	8580/TP119/0.1-0.2	8580/TP120/0.1-0.2	8580/TP121/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	94	87	64	75	62

PCBs in Soil						
Our Reference		358235-70	358235-73	358235-76	358235-79	358235-82
Your Reference	UNITS	8580/TP122/0.1-0.2	8580/TP123/0.1-0.2	8580/TP124/0.1-0.2	8580/TP125/0.1-0.2	8580/TP126/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	66	75	74	65	65

PCBs in Soil						
Our Reference		358235-85	358235-87	358235-88	358235-90	358235-96
Your Reference	UNITS	8580/TP127/0.1-0.2	8580/TP128/0.0-0.1	8580/TP129/0.1-0.2	8580/TP130/0.1-0.2	8580/TP133/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	64	70	73	65	67

PCBs in Soil		
Our Reference		358235-98
Your Reference	UNITS	8580/TP134/0.1-0.2
Date Sampled		31/07/2024
Type of sample		Soil
Date extracted	-	05/08/2024
Date analysed	-	06/08/2024
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate 2-Fluorobiphenyl	%	67

Acid Extractable metals in soil						
Our Reference		358235-1	358235-4	358235-7	358235-11	358235-14
Your Reference	UNITS	8580/TP101/0.1-0.2	8580/TP102/0.1-0.2	8580/TP103/0.1-0.2	8580/TP104/0.1-0.2	8580/TP105/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024	07/08/2024	07/08/2024
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	<1	2	9	13	3
Copper	mg/kg	<1	1	9	2	4
Lead	mg/kg	<1	<1	3	1	3
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	1	<1	<1
Zinc	mg/kg	<1	2	36	1	2

Acid Extractable metals in soil						
Our Reference		358235-17	358235-21	358235-24	358235-29	358235-33
Your Reference	UNITS	8580/TP106/0.1-0.2	8580/TP107/0.1-0.2	8580/TP108/0.1-0.2	8580/TP109/0.1-0.2	8580/TP110/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024	07/08/2024	07/08/2024
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	<1	2	9	3	4
Copper	mg/kg	1	1	25	3	9
Lead	mg/kg	<1	<1	3	4	5
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	<1	2	1
Zinc	mg/kg	<1	18	12	23	10

Acid Extractable metals in soil						
Our Reference		358235-36	358235-38	358235-42	358235-46	358235-49
Your Reference	UNITS	8580/TP111/0.1-0.2	8580/TP112/0.1-0.2	8580/TP113/0.1-0.2	8580/TP114/0.1-0.2	8580/TP115/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024	07/08/2024	07/08/2024
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	3	1	5	2	4
Copper	mg/kg	13	2	3	7	12
Lead	mg/kg	5	2	1	3	6
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	<1	<1	<1	3
Zinc	mg/kg	7	5	7	7	54

Acid Extractable metals in soil						
Our Reference		358235-52	358235-54	358235-60	358235-64	358235-67
Your Reference	UNITS	8580/TP116/0.1-0.2	8580/TP117/0.1-0.2	8580/TP119/0.1-0.2	8580/TP120/0.1-0.2	8580/TP121/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024	07/08/2024	07/08/2024
Arsenic	mg/kg	7	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	5	4	4	1	2
Copper	mg/kg	8	11	5	2	10
Lead	mg/kg	4	14	2	1	6
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	2	<1	<1	<1
Zinc	mg/kg	37	22	2	5	7

Acid Extractable metals in soil						
Our Reference		358235-70	358235-73	358235-76	358235-79	358235-82
Your Reference	UNITS	8580/TP122/0.1-0.2	8580/TP123/0.1-0.2	8580/TP124/0.1-0.2	8580/TP125/0.1-0.2	8580/TP126/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024	07/08/2024	07/08/2024
Arsenic	mg/kg	7	6	<4	5	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	2	3	2	2	4
Copper	mg/kg	17	10	4	30	13
Lead	mg/kg	27	12	3	8	4
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	<1	<1	2	<1
Zinc	mg/kg	18	11	25	8	7

Acid Extractable metals in soil						
Our Reference		358235-85	358235-87	358235-88	358235-90	358235-96
Your Reference	UNITS	8580/TP127/0.1-0.2	8580/TP128/0.0-0.1	8580/TP129/0.1-0.2	8580/TP130/0.1-0.2	8580/TP133/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024	07/08/2024	07/08/2024
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	1	4	2	2	2
Copper	mg/kg	2	14	3	75	12
Lead	mg/kg	<1	4	1	2	2
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	3	1	<1	<1
Zinc	mg/kg	3	21	24	18	32

Acid Extractable metals in soil					
Our Reference		358235-98	358235-99	358235-100	358235-105
Your Reference	UNITS	8580/TP134/0.1-0.2	DUP01	DUP02	8580/TP108/0.1-0.2 - [TRIPLICATE]
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024	07/08/2024
Arsenic	mg/kg	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	3	2	6	11
Copper	mg/kg	9	1	35	18
Lead	mg/kg	5	<1	3	2
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	<1	1	<1
Zinc	mg/kg	22	3	17	8

Moisture						
Our Reference		358235-1	358235-4	358235-7	358235-11	358235-14
Your Reference	UNITS	8580/TP101/0.1-0.2	8580/TP102/0.1-0.2	8580/TP103/0.1-0.2	8580/TP104/0.1-0.2	8580/TP105/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Moisture	%	15	20	21	23	14

Moisture						
Our Reference		358235-17	358235-21	358235-24	358235-29	358235-33
Your Reference	UNITS	8580/TP106/0.1-0.2	8580/TP107/0.1-0.2	8580/TP108/0.1-0.2	8580/TP109/0.1-0.2	8580/TP110/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Moisture	%	13	11	14	19	16

Moisture						
Our Reference		358235-36	358235-38	358235-42	358235-46	358235-49
Your Reference	UNITS	8580/TP111/0.1-0.2	8580/TP112/0.1-0.2	8580/TP113/0.1-0.2	8580/TP114/0.1-0.2	8580/TP115/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Moisture	%	14	24	17	10	8.0

Moisture						
Our Reference		358235-52	358235-54	358235-60	358235-64	358235-67
Your Reference	UNITS	8580/TP116/0.1-0.2	8580/TP117/0.1-0.2	8580/TP119/0.1-0.2	8580/TP120/0.1-0.2	8580/TP121/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Moisture	%	8.4	10	5.9	7.7	14

Moisture						
Our Reference		358235-70	358235-73	358235-76	358235-79	358235-82
Your Reference	UNITS	8580/TP122/0.1-0.2	8580/TP123/0.1-0.2	8580/TP124/0.1-0.2	8580/TP125/0.1-0.2	8580/TP126/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Moisture	%	19	18	9.4	7.8	13

Moisture						
Our Reference		358235-85	358235-87	358235-88	358235-90	358235-96
Your Reference	UNITS	8580/TP127/0.1-0.2	8580/TP128/0.0-0.1	8580/TP129/0.1-0.2	8580/TP130/0.1-0.2	8580/TP133/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Moisture	%	3.4	11	10	4.3	3.8

Moisture				
Our Reference		358235-98	358235-99	358235-100
Your Reference	UNITS	8580/TP134/0.1-0.2	DUP01	DUP02
Date Sampled		31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024
Moisture	%	20	12	9.0

Misc Inorg - Soil				
Our Reference		358235-27	358235-63	358235-84
Your Reference	UNITS	8580/TP108/1.5-1.6	8580/TP119/1.3-1.4	8580/TP126/1.0/1.1
Date Sampled		31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil
Date prepared	-	02/08/2024	02/08/2024	02/08/2024
Date analysed	-	09/08/2024	09/08/2024	09/08/2024
pH 1:5 soil:water	pH Units	6.4	6.4	6.8

CEC				
Our Reference		358235-27	358235-63	358235-84
Your Reference	UNITS	8580/TP108/1.5-1.6	8580/TP119/1.3-1.4	8580/TP126/1.0/1.1
Date Sampled		31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil
Date prepared	-	07/08/2024	07/08/2024	07/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024
Exchangeable Ca	meq/100g	0.1	<0.1	0.5
Exchangeable K	meq/100g	<0.1	<0.1	<0.1
Exchangeable Mg	meq/100g	<0.1	<0.1	<0.1
Exchangeable Na	meq/100g	<0.1	<0.1	<0.1
Cation Exchange Capacity	meq/100g	<1	<1	<1

Asbestos ID - soils						
Our Reference		358235-1	358235-4	358235-7	358235-11	358235-14
Your Reference	UNITS	8580/TP101/0.1-0.2	8580/TP102/0.1-0.2	8580/TP103/0.1-0.2	8580/TP104/0.1-0.2	8580/TP105/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	08/08/2024	08/08/2024	08/08/2024	08/08/2024	08/08/2024
Sample mass tested	g	Approx. 40g	Approx. 30g	Approx. 30g	Approx. 35g	Approx. 35g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		358235-17	358235-21	358235-24	358235-29	358235-33
Your Reference	UNITS	8580/TP106/0.1-0.2	8580/TP107/0.1-0.2	8580/TP108/0.1-0.2	8580/TP109/0.1-0.2	8580/TP110/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	08/08/2024	08/08/2024	08/08/2024	08/08/2024	08/08/2024
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 40g	Approx. 45g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		358235-36	358235-38	358235-42	358235-46	358235-49
Your Reference	UNITS	8580/TP111/0.1-0.2	8580/TP112/0.1-0.2	8580/TP113/0.1-0.2	8580/TP114/0.1-0.2	8580/TP115/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	08/08/2024	08/08/2024	08/08/2024	08/08/2024	08/08/2024
Sample mass tested	g	Approx. 35g	Approx. 30g	Approx. 35g	Approx. 40g	Approx. 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		358235-52	358235-54	358235-60	358235-64	358235-67
Your Reference	UNITS	8580/TP116/0.1-0.2	8580/TP117/0.1-0.2	8580/TP119/0.1-0.2	8580/TP120/0.1-0.2	8580/TP121/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	08/08/2024	08/08/2024	08/08/2024	08/08/2024	08/08/2024
Sample mass tested	g	Approx. 35g	Approx. 30g	Approx. 40g	Approx. 35g	Approx. 45g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Beige coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		358235-70	358235-73	358235-76	358235-79	358235-82
Your Reference	UNITS	8580/TP122/0.1-0.2	8580/TP123/0.1-0.2	8580/TP124/0.1-0.2	8580/TP125/0.1-0.2	8580/TP126/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	08/08/2024	08/08/2024	08/08/2024	08/08/2024	08/08/2024
Sample mass tested	g	Approx. 40g	Approx. 30g	Approx. 35g	Approx. 40g	Approx. 40g
Sample Description	-	Beige coarse-grained soil & rocks	Beige coarse-grained soil & rocks	Brown sandy soil	Beige coarse-grained soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		358235-85	358235-87	358235-88	358235-90	358235-96
Your Reference	UNITS	8580/TP127/0.1-0.2	8580/TP128/0.0-0.1	8580/TP129/0.1-0.2	8580/TP130/0.1-0.2	8580/TP133/0.1-0.2
Date Sampled		31/07/2024	31/07/2024	31/07/2024	31/07/2024	31/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	08/08/2024	08/08/2024	08/08/2024	08/08/2024	08/08/2024
Sample mass tested	g	Approx. 40g	Approx. 30g	Approx. 35g	Approx. 35g	Approx. 40g
Sample Description	-	Brown sandy soil	Brown coarse-grained soil & rocks	Brown sandy soil	Brown sandy soil	Brown sandy soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils		
Our Reference		358235-98
Your Reference	UNITS	8580/TP134/0.1-0.2
Date Sampled		31/07/2024
Type of sample		Soil
Date analysed	-	08/08/2024
Sample mass tested	g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	Nil
Trace Analysis	-	No asbestos detected

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-001	pH - Measured using pH meter and electrode. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-020	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-OES analytical finish.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	358235-4
Date extracted	-			05/08/2024	1	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			09/08/2024	1	09/08/2024	09/08/2024		09/08/2024	09/08/2024
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	95	95
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	95	95
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	90	92
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	88	92
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	101	99
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	99	97
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	95	93
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	71	1	87	84	4	97	90

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	358235-67
Date extracted	-			[NT]	24	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			[NT]	24	09/08/2024	09/08/2024		09/08/2024	09/08/2024
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	24	<25	<25	0	102	89
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	24	<25	<25	0	102	89
Benzene	mg/kg	0.2	Org-023	[NT]	24	<0.2	<0.2	0	96	83
Toluene	mg/kg	0.5	Org-023	[NT]	24	<0.5	<0.5	0	89	80
Ethylbenzene	mg/kg	1	Org-023	[NT]	24	<1	<1	0	106	96
m+p-xylene	mg/kg	2	Org-023	[NT]	24	<2	<2	0	109	94
o-Xylene	mg/kg	1	Org-023	[NT]	24	<1	<1	0	107	90
Naphthalene	mg/kg	1	Org-023	[NT]	24	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	24	85	84	1	90	86

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	64	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	64	09/08/2024	09/08/2024		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	64	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	64	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	64	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	64	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	64	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	64	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	64	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	64	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	64	82	79	4	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	79	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	79	09/08/2024	09/08/2024		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	79	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	79	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	79	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	79	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	79	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	79	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	79	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	79	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	79	82	83	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	358235-4
Date extracted	-			05/08/2024	1	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			06/08/2024	1	05/08/2024	05/08/2024		05/08/2024	05/08/2024
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	76	74
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	73	74
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	71	71
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	76	74
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	73	74
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	71	71
Surrogate o-Terphenyl	%		Org-020	77	1	90	95	5	73	72

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	358235-67
Date extracted	-			[NT]	24	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			[NT]	24	05/08/2024	05/08/2024		06/08/2024	06/08/2024
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	24	<50	<50	0	78	73
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	24	<100	<100	0	74	75
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	24	<100	<100	0	129	72
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	24	<50	<50	0	78	73
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	24	<100	<100	0	74	75
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	24	<100	<100	0	129	72
Surrogate o-Terphenyl	%		Org-020	[NT]	24	99	99	0	73	77

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	64	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	64	06/08/2024	06/08/2024		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	64	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	64	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	64	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	64	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	64	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	64	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	64	90	89	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	79	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	79	06/08/2024	06/08/2024		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	79	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	79	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	79	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	79	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	79	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	79	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	79	68	69	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	358235-4
Date extracted	-			05/08/2024	1	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			06/08/2024	1	06/08/2024	06/08/2024		06/08/2024	06/08/2024
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	70	60
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	68	60
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	62	78
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	94	82
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	84
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	90	82
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	64	64
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	76	74
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	107	1	92	91	1	113	100

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	358235-67
Date extracted	-			[NT]	24	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			[NT]	24	06/08/2024	06/08/2024		06/08/2024	06/08/2024
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	78	68
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	72	68
Fluorene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	78	64
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	90	84
Anthracene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	78	92
Pyrene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	78	92
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	64	60
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	24	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	24	<0.05	<0.05	0	76	72
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	24	109	110	1	99	110

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	64	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	64	06/08/2024	06/08/2024		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	64	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	64	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	64	80	77	4	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	79	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	79	06/08/2024	06/08/2024		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	79	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	79	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	79	82	85	4	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	358235-4
Date extracted	-			05/08/2024	1	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			06/08/2024	1	06/08/2024	06/08/2024		06/08/2024	06/08/2024
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	82	86
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	78	82
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	100	90
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	92
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	102	98
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	90	82
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	114	94
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	100	94
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	88
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	100	92
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	105	1	62	62	0	84	81

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	358235-67
Date extracted	-			[NT]	24	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			[NT]	24	06/08/2024	06/08/2024		06/08/2024	06/08/2024
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	86	78
HCB	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	82	72
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	84	96
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	90	104
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	98	112
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	84	90
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	94	112
Endrin	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	88	102
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	88	100
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	86	100
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	24	94	92	2	93	84

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	64	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	64	06/08/2024	06/08/2024		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	64	69	66	4	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	79	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	79	06/08/2024	06/08/2024		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	79	66	66	0	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	358235-4
Date extracted	-			05/08/2024	1	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			06/08/2024	1	06/08/2024	06/08/2024		06/08/2024	06/08/2024
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	90
Mevinphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	78
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	90	74
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	86	84
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	80
Fenthion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	78	76
Bromophos-ethyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	86	82
Phosalone	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	105	1	62	62	0	84	81

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	358235-67
Date extracted	-			[NT]	24	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			[NT]	24	06/08/2024	06/08/2024		06/08/2024	06/08/2024
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	84	84
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	78	88
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	82	90
Malathion	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	80	92
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	78	88
Fenthion	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	78	88
Bromophos-ethyl	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	84	90
Phosalone	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	24	94	92	2	93	84

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	64	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	64	06/08/2024	06/08/2024		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	64	69	66	4	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	79	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	79	06/08/2024	06/08/2024		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	79	66	66	0	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	358235-4
Date extracted	-			05/08/2024	1	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			06/08/2024	1	06/08/2024	06/08/2024		06/08/2024	06/08/2024
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	113	100
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	91	1	71	68	4	85	83

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	358235-67
Date extracted	-			[NT]	24	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			[NT]	24	06/08/2024	06/08/2024		06/08/2024	06/08/2024
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	24	<0.1	<0.1	0	115	100
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	24	107	83	25	89	83

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	64	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	64	06/08/2024	06/08/2024		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	64	75	62	19	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	79	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	79	06/08/2024	06/08/2024		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	79	65	67	3	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	358235-4
Date prepared	-			05/08/2024	1	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			07/08/2024	1	07/08/2024	07/08/2024		07/08/2024	07/08/2024
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	97	92
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	86	82
Chromium	mg/kg	1	Metals-020	<1	1	<1	1	0	104	100
Copper	mg/kg	1	Metals-020	<1	1	<1	<1	0	107	103
Lead	mg/kg	1	Metals-020	<1	1	<1	<1	0	102	99
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	96	100
Nickel	mg/kg	1	Metals-020	<1	1	<1	<1	0	107	103
Zinc	mg/kg	1	Metals-020	<1	1	<1	<1	0	103	100

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	358235-67
Date prepared	-			[NT]	24	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			[NT]	24	07/08/2024	07/08/2024		07/08/2024	07/08/2024
Arsenic	mg/kg	4	Metals-020	[NT]	24	<4	<4	0	97	96
Cadmium	mg/kg	0.4	Metals-020	[NT]	24	<0.4	<0.4	0	86	86
Chromium	mg/kg	1	Metals-020	[NT]	24	9	11	20	103	103
Copper	mg/kg	1	Metals-020	[NT]	24	25	54	73	104	107
Lead	mg/kg	1	Metals-020	[NT]	24	3	5	50	100	100
Mercury	mg/kg	0.1	Metals-021	[NT]	24	<0.1	<0.1	0	98	95
Nickel	mg/kg	1	Metals-020	[NT]	24	<1	1	0	106	107
Zinc	mg/kg	1	Metals-020	[NT]	24	12	16	29	103	104

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	64	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	64	07/08/2024	07/08/2024		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	64	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	64	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	64	1	1	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	64	2	2	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	64	1	1	0	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	64	<1	<1	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	64	5	5	0	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	79	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	79	07/08/2024	07/08/2024		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	79	5	5	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	79	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	79	2	3	40	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	79	30	30	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	79	8	11	32	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	79	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	79	2	2	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	79	8	8	0	[NT]	[NT]

QUALITY CONTROL: Misc Inorg - Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			02/08/2024	[NT]	[NT]	[NT]	[NT]	02/08/2024	[NT]
Date analysed	-			09/08/2024	[NT]	[NT]	[NT]	[NT]	09/08/2024	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	358235-63
Date prepared	-			07/08/2024	27	07/08/2024	07/08/2024		07/08/2024	07/08/2024
Date analysed	-			07/08/2024	27	07/08/2024	07/08/2024		07/08/2024	07/08/2024
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	27	0.1	0.1	0	76.55	89.35
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	27	<0.1	<0.1	0	78	83.9
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	27	<0.1	<0.1	0	72.9	83.87
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	27	<0.1	<0.1	0	99.25	99.1

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 358235-24 for Cu. Therefore a triplicate result has been issued as laboratory sample number 358235-105.

Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to ASB-001 asbestos subsampling procedure. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab/MPL recommends supplying 40-60g or 500ml of sample in its own container.
Note: Samples requested for asbestos testing were sub-sampled from jars provided by the client.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 358231

Client Details

Client	Martens & Associates Pty Ltd
Attention	Trystan Richards
Address	Suite 201, 20 George St, Hornsby, NSW, 2077

Sample Details

Your Reference	**P2108580:87-89 Tweed Coast Rd, Hastings Point**
Number of Samples	6 Water
Date samples received	02/08/2024
Date completed instructions received	02/08/2024

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	09/08/2024
Date of Issue	09/08/2024

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Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water						
Our Reference		358231-1	358231-2	358231-3	358231-5	358231-6
Your Reference	UNITS	8580/MW05	8580/MW06	8580/MW09	Trip Spike	Trip Blank
Date Sampled		01/08/2024	01/08/2024	01/08/2024	01/08/2024	01/08/2024
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Date analysed	-	08/08/2024	08/08/2024	08/08/2024	08/08/2024	08/08/2024
TRH C_6 - C_9	µg/L	<10	<10	<10	[NA]	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	[NA]	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	[NA]	[NA]
Benzene	µg/L	<1	<1	<1	105%	[NA]
Toluene	µg/L	<1	<1	<1	111%	[NA]
Ethylbenzene	µg/L	<1	<1	<1	103%	[NA]
m+p-xylene	µg/L	<2	<2	<2	103%	[NA]
o-xylene	µg/L	<1	<1	<1	106%	[NA]
Naphthalene	µg/L	<1	<1	<1	[NA]	[NA]
Surrogate Dibromofluoromethane	%	103	101	100	98	101
Surrogate Toluene-d8	%	99	91	102	104	93
Surrogate 4-Bromofluorobenzene	%	103	91	96	99	96

svTRH (C10-C40) in Water				
Our Reference		358231-1	358231-2	358231-3
Your Reference	UNITS	8580/MW05	8580/MW06	8580/MW09
Date Sampled		01/08/2024	01/08/2024	01/08/2024
Type of sample		Water	Water	Water
Date extracted	-	06/08/2024	06/08/2024	06/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024
TRH C_{10} - C_{14}	µg/L	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100
Total +ve TRH (C10-C36)	µg/L	<50	<50	<50
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	<50	<50	<50
Surrogate o-Terphenyl	%	109	99	107

PAHs in Water				
Our Reference	UNITS	358231-1	358231-2	358231-3
Your Reference		8580/MW05	8580/MW06	8580/MW09
Date Sampled		01/08/2024	01/08/2024	01/08/2024
Type of sample		Water	Water	Water
Date extracted	-	06/08/2024	06/08/2024	06/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024
Naphthalene	µg/L	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	101	102	91

Organochlorine Pesticides in Water				
Our Reference	UNITS	358231-1	358231-2	358231-3
Your Reference		8580/MW05	8580/MW06	8580/MW09
Date Sampled		01/08/2024	01/08/2024	01/08/2024
Type of sample		Water	Water	Water
Date extracted	-	06/08/2024	06/08/2024	06/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024
alpha-BHC	µg/L	<0.2	<0.2	<0.2
HCB	µg/L	<0.2	<0.2	<0.2
beta-BHC	µg/L	<0.2	<0.2	<0.2
gamma-BHC	µg/L	<0.2	<0.2	<0.2
Heptachlor	µg/L	<0.2	<0.2	<0.2
delta-BHC	µg/L	<0.2	<0.2	<0.2
Aldrin	µg/L	<0.2	<0.2	<0.2
Heptachlor Epoxide	µg/L	<0.2	<0.2	<0.2
gamma-Chlordane	µg/L	<0.2	<0.2	<0.2
alpha-Chlordane	µg/L	<0.2	<0.2	<0.2
Endosulfan I	µg/L	<0.2	<0.2	<0.2
pp-DDE	µg/L	<0.2	<0.2	<0.2
Dieldrin	µg/L	<0.2	<0.2	<0.2
Endrin	µg/L	<0.2	<0.2	<0.2
Endosulfan II	µg/L	<0.2	<0.2	<0.2
pp-DDD	µg/L	<0.2	<0.2	<0.2
Endrin Aldehyde	µg/L	<0.2	<0.2	<0.2
pp-DDT	µg/L	<0.2	<0.2	<0.2
Endosulfan Sulphate	µg/L	<0.2	<0.2	<0.2
Methoxychlor	µg/L	<0.2	<0.2	<0.2
Mirex	ug/L	<0.2	<0.2	<0.2
Surrogate 4-Chloro-3-NBTF	%	112	101	90

OP Pesticides in Water				
Our Reference	UNITS	358231-1	358231-2	358231-3
Your Reference		8580/MW05	8580/MW06	8580/MW09
Date Sampled		01/08/2024	01/08/2024	01/08/2024
Type of sample		Water	Water	Water
Date extracted	-	06/08/2024	06/08/2024	06/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024
Dichlorvos	µg/L	<0.2	<0.2	<0.2
Mevinphos	µg/L	<0.2	<0.2	<0.2
Phorate	µg/L	<0.2	<0.2	<0.2
Dimethoate	µg/L	<0.2	<0.2	<0.2
Diazinon	µg/L	<0.2	<0.2	<0.2
Disulfoton	µg/L	<0.2	<0.2	<0.2
Chlorpyriphos-methyl	µg/L	<0.2	<0.2	<0.2
Parathion-Methyl	µg/L	<0.2	<0.2	<0.2
Ronnel	µg/L	<0.2	<0.2	<0.2
Fenitrothion	µg/L	<0.2	<0.2	<0.2
Malathion	µg/L	<0.2	<0.2	<0.2
Chlorpyriphos	µg/L	<0.2	<0.2	<0.2
Fenthion	µg/L	<0.2	<0.2	<0.2
Parathion	µg/L	<0.2	<0.2	<0.2
Bromophos ethyl	µg/L	<0.2	<0.2	<0.2
Methidathion	µg/L	<0.2	<0.2	<0.2
Fenamiphos	µg/L	<0.2	<0.2	<0.2
Ethion	µg/L	<0.2	<0.2	<0.2
Phosalone	µg/L	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	µg/L	<0.2	<0.2	<0.2
Coumaphos	µg/L	<0.2	<0.2	<0.2
Surrogate 4-Chloro-3-NBTF	%	112	101	90

PCBs in Water				
Our Reference	UNITS	358231-1	358231-2	358231-3
Your Reference		8580/MW05	8580/MW06	8580/MW09
Date Sampled		01/08/2024	01/08/2024	01/08/2024
Type of sample		Water	Water	Water
Date extracted	-	06/08/2024	06/08/2024	06/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024
Aroclor 1016	µg/L	<2	<2	<2
Aroclor 1221	µg/L	<2	<2	<2
Aroclor 1232	µg/L	<2	<2	<2
Aroclor 1242	µg/L	<2	<2	<2
Aroclor 1248	µg/L	<2	<2	<2
Aroclor 1254	µg/L	<2	<2	<2
Aroclor 1260	µg/L	<2	<2	<2
Surrogate 2-Fluorobiphenyl	%	103	101	91

HM in water - total					
Our Reference		358231-1	358231-2	358231-3	358231-4
Your Reference	UNITS	8580/MW05	8580/MW06	8580/MW09	DUP01
Date Sampled		01/08/2024	01/08/2024	01/08/2024	01/08/2024
Type of sample		Water	Water	Water	Water
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Arsenic-Total	µg/L	5	2	4	1
Cadmium-Total	µg/L	<0.1	<0.1	<0.1	<0.1
Chromium-Total	µg/L	4	5	8	4
Copper-Total	µg/L	3	4	6	3
Lead-Total	µg/L	<1	2	3	4
Mercury-Total	µg/L	<0.05	0.4	0.4	<0.05
Nickel-Total	µg/L	3	32	5	1
Zinc-Total	µg/L	7	12	18	14

Method ID	Methodology Summary
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Salt forms (e.g. FeO, PbO, ZnO) are determined stoichiometrically from the base metal concentration.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			06/08/2024	[NT]	[NT]	[NT]	[NT]	06/08/2024	[NT]
Date analysed	-			08/08/2024	[NT]	[NT]	[NT]	[NT]	08/08/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	113	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	113	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	115	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate Toluene-d8	%		Org-023	96	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			06/08/2024	1	06/08/2024	06/08/2024		06/08/2024	[NT]
Date analysed	-			07/08/2024	1	07/08/2024	07/08/2024		07/08/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	1	<50	<50	0	120	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	1	<100	<100	0	114	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	1	<100	<100	0	114	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	1	<50	<50	0	120	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	1	<100	<100	0	114	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	1	<100	<100	0	114	[NT]
Surrogate o-Terphenyl	%		Org-020	107	1	109	119	9	90	[NT]

QUALITY CONTROL: PAHs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			06/08/2024	1	06/08/2024	06/08/2024		06/08/2024	[NT]
Date analysed	-			06/08/2024	1	06/08/2024	06/08/2024		06/08/2024	[NT]
Naphthalene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	87	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	87	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	90	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	83	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	91	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	92	1	101	95	6	89	[NT]

QUALITY CONTROL: Organochlorine Pesticides in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			06/08/2024	1	06/08/2024	06/08/2024		06/08/2024	[NT]
Date analysed	-			06/08/2024	1	06/08/2024	06/08/2024		06/08/2024	[NT]
alpha-BHC	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	87	[NT]
HCB	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
beta-BHC	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	88	[NT]
gamma-BHC	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Heptachlor	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	81	[NT]
delta-BHC	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Aldrin	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	95	[NT]
Heptachlor Epoxide	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	88	[NT]
gamma-Chlordane	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
alpha-Chlordane	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Endosulfan I	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
pp-DDE	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	87	[NT]
Dieldrin	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	91	[NT]
Endrin	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	97	[NT]
Endosulfan II	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
pp-DDD	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	95	[NT]
Endrin Aldehyde	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
pp-DDT	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	89	[NT]
Methoxychlor	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Mirex	ug/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	75	1	112	104	7	86	[NT]

QUALITY CONTROL: OP Pesticides in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			06/08/2024	1	06/08/2024	06/08/2024		06/08/2024	[NT]
Date analysed	-			06/08/2024	1	06/08/2024	06/08/2024		06/08/2024	[NT]
Dichlorvos	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	94	[NT]
Mevinphos	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Phorate	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Dimethoate	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Diazinon	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Disulfoton	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Chlorpyriphos-methyl	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Parathion-Methyl	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Ronnel	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	72	[NT]
Fenitrothion	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	72	[NT]
Malathion	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	92	[NT]
Chlorpyriphos	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	83	[NT]
Fenthion	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Parathion	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	78	[NT]
Bromophos ethyl	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Methidathion	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Fenamiphos	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Ethion	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	95	[NT]
Phosalone	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Azinphos-methyl (Guthion)	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Coumaphos	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	75	1	112	104	7	86	[NT]

QUALITY CONTROL: PCBs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			06/08/2024	1	06/08/2024	06/08/2024		06/08/2024	[NT]
Date analysed	-			06/08/2024	1	06/08/2024	06/08/2024		06/08/2024	[NT]
Aroclor 1016	µg/L	2	Org-021/022/025	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1221	µg/L	2	Org-021/022/025	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1232	µg/L	2	Org-021/022/025	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1242	µg/L	2	Org-021/022/025	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1248	µg/L	2	Org-021/022/025	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1254	µg/L	2	Org-021/022/025	<2	1	<2	<2	0	99	[NT]
Aroclor 1260	µg/L	2	Org-021/022/025	<2	1	<2	<2	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	79	1	103	98	5	91	[NT]

QUALITY CONTROL: HM in water - total						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	358231-2
Date prepared	-			05/08/2024	1	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			05/08/2024	1	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Arsenic-Total	µg/L	1	Metals-022	<1	1	5	5	0	96	97
Cadmium-Total	µg/L	0.1	Metals-022	<0.1	1	<0.1	<0.1	0	98	102
Chromium-Total	µg/L	1	Metals-022	<1	1	4	4	0	94	96
Copper-Total	µg/L	1	Metals-022	<1	1	3	3	0	102	103
Lead-Total	µg/L	1	Metals-022	<1	1	<1	<1	0	106	107
Mercury-Total	µg/L	0.05	Metals-021	<0.05	1	<0.05	[NT]		116	[NT]
Nickel-Total	µg/L	1	Metals-022	<1	1	3	4	29	96	96
Zinc-Total	µg/L	1	Metals-022	<1	1	7	7	0	98	98

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

CERTIFICATE OF ANALYSIS

Work Order	: **ES2425438**	Page	: 1 of 2
Client	: **MARTENS & ASSOCIATES PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: TRYSTAN RICHARDS	Contact	: Customer Services ES
Address	: Suite 201 Level 2 20 George Street HORNSBY NSW, AUSTRALIA 2077	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: ----	Date Samples Received	: 05-Aug-2024 14:47
Order number	: ----	Date Analysis Commenced	: 08-Aug-2024
C-O-C number	: ----	Issue Date	: 12-Aug-2024 14:32
Sampler	: ----		
Site	: ----		
Quote number	: EN/333		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW

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.

- Unless otherwise stated, analytical work for this work order will be conducted at ALS Sydney, NATA accreditation no. 825, site no. 10911.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	DUP03	----	----	----	----
			Sampling date / time	30-Jul-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2425438-001	--------	--------	--------	--------
				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**4.6**	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	**3**	----	----	----	----
Copper	7440-50-8	5	mg/kg	<5	----	----	----	----
Lead	7439-92-1	5	mg/kg	<5	----	----	----	----
Nickel	7440-02-0	2	mg/kg	<2	----	----	----	----
Zinc	7440-66-6	5	mg/kg	<5	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----

Appendix I – COC and Sample Receipt

COC 2/8/24, 1140

martens
consulting engineers since 1989

SOIL ANALYSIS CHAIN OF CUSTODY FORM

Additional Testing												
Name	P2108580: 87-89 Tweed Coast Road, Hastings Point, NSW											
Martens Contact Officer	Trystan Richards				**Contact Email**	trichards@martens.com.au						
Sampling and Shipping	**Sample Date**	30/7/2024	**Dispatch Date**	31/07/2024	**Turnaround Time**	Standard						
	Our Reference	P2108580COC04V01			**Shipping Method (X)**	**Hand**		**Post**		**Courier**	X	
	On Ice (X)	X	**No Ice (X)**		**Other (X)**							

Laboratory											
Name	EnviroLab										
Sample Delivery Address	12 Ashley Street, Chatswood										
Delivery Contact	**Name**	Sample Receipt	**Phone**	9910 6200	**Fax**		**Email**	samplereceipt@envirolabservices.com.au			
Please Send Report By (X)	**Post**		**Fax**		**Email**	X	**Reporting Email Address**	trichards@martens.com.au rmehaffey@martens.com.au bmcgiffin@martens.com.au nfoster@martens.com.au martens@esdat.com.au			

	Sample ID	Combo 6a	Heavy Metals	TRH	BTEXN	CEC	pH	Hold
1	8580/TP101/0.1-0.2	X						
2	8580/TP101/0.5-0.6							X
3	8580/TP101/1.1-1/2							X
4	8580/TP102/0.1-0.2	X						
5	8580/TP102/0.4-0.5							X
6	8580/TP102/0.8-0.9							X
7	8580/TP103/0.1-0.2	X						
8	8580/TP103/0.4-0.5							X
9	8580/TP103/1.0-1.1							X
10	8580/TP103/1.4-1.5							X
11	8580/TP104/0.1-0.2	X						
12	8580/TP104/0.4-0.5							X
13	8580/TP104/1.0-1.1							X
14	8580/TP105/0.1-0.2	X						

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
ENVIROLAB
Job No: 358225
Date Received: 2/8/24
Time Received: 1100
Received By: CW
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Head Office
Suite 201, Level 2, 20 George Street
Hornsby NSW 2077, Australia
Ph 02 9476 9999 **Fax** 02 9476 8767

> mail@martens.com.au
> www.martens.com.au
MARTENS & ASSOCIATES P/L
ABN 85 070 240 890 ACN 070 240 890

SOIL ANALYSIS CHAIN OF CUSTODY

#358235
2/8/24
O.W

Sample ID	Combo 6a	Heavy Metals	TRH	BTEXN	CEC	pH	Hold
8580/TP105/0.5-0.6 15							X
8580/TP105/1.1-1.2 16							X
8580/TP106/0.1-0.2 17	X						
8580/TP106/0.4-0.5 18							X
8580/TP106/0.6-0.7 19							X
8580/TP106/0.9-1.0 20							X
8580/TP107/0.1-0.2 21	X						
8580/TP107/0.4-0.5 22							X
8580/TP107/0.7-0.8 23							X
8580/TP108/0.1-0.2 24	X						
8580/TP108/0.4-0.5 25							X
8580/TP108/1.1-1.2 26							X
8580/TP108/1.5-1.6 27					X	X	
8580/TP108/1.9-2.0 28							X
8580/TP109/0.1-0.2 29	X						
8580/TP109/0.4-0.5 30							X
8580/TP109/1.0-1.1 31							X
8580/TP109/1.5-1.6 32							X
8580/TP110/0.1-0.2 33	X						
8580/TP110/0.4-0.5 34							X
8580/TP110/0.9-1.0 35							X
8580/TP111/0.1-0.2 36	X						
8580/TP111/0.4-0.5 37							X
8580/TP112/0.1-0.2 38	X						
8580/TP112/0.4-0.5 39							X
8580/TP112/0.9-1.0 40							X
8580/TP112/1.5-1.6 41							X
8580/TP113/0.1-0.2 42	X						
8580/TP113/0.4-0.5 43							X
8580/TP113/0.9-1.0 44							X
8580/TP113/1.4-1.5 45							X
8580/TP114/0.1-0.2 46	X						
8580/TP114/0.4-0.5 47							X
8580/TP114/1.0-1.1 48							X
8580/TP115/0.1-0.2 49	X						
8580/TP115/0.4-0.5 50							X
8580/TP115/0.9-1.0 51							X
8580/TP116/0.1-0.2 52	X						
8580/TP116/0.4-0.5 53							X
8580/TP117/0.1-0.2 54	X						
8580/TP117/0.4-0.5 55							X
8580/TP117/0.9-1.0 56							X
8580/TP118/0.1-0.2 57							X
8580/TP118/0.6-0.7 58							X
8580/TP118/1.0-1.1 59							X
8580/TP119/0.1-0.2 60	X						

#358235
2/8/24
OW

SOIL ANALYSIS CHAIN OF CUSTODY

	Sample ID	Combo 6a	Heavy Metals	TRH	BTEXN	CEC	pH	Hold
61	8580/TP119/0.4-0.5							X
62	8580/TP119/0.9-1.0							X
63	8580/TP119/1.3-1.4					X	X	
64	8580/TP120/0.1-0.2	X						
65	8580/TP120/0.5-0.6							X
66	8580/TP120/0.9-1.0							X
67	8580/TP121/0.1-0.2	X						
68	8580/TP121/0.5-0.6							X
69	8580/TP121/1.0-1.1							X
70	8580/TP122/0.1-0.2	X						
71	8580/TP122/0.4-0.5							X
72	8580/TP122/0.9-1.0							X
73	8580/TP123/0.1-0.2	X						
74	8580/TP123/0.5-0.6							X
75	8580/TP123/1.0-1.1							X
76	8580/TP124/0.1-0.2	X						
77	8580/TP124/0.5-0.6							X
78	8580/TP124/1.0-1.1							X
79	8580/TP125/0.1-0.2	X						
80	8580/TP125/0.3-0.4							X
81	8580/TP125/0.5-0.6							X
82	8580/TP126/0.1-0.2	X						
83	8580/TP126/0.5-0.6							X
84	8580/TP126/1.0/1.1					X	X	
85	8580/TP127/0.1-0.2	X						
86	8580/TP127/0.5-0.6							X
87	8580/TP128/0.0-0.1	X						
88	8580/TP129/0.1-0.2	X						
89	8580/TP129/0.5-0.6							X
90	8580/TP130/0.1-0.2	X						
91	8580/TP130/0.5-0.6							X
92	8580/TP131/0.1-0.2							X
93	8580/TP131/0.5-0.6							X
94	8580/TP132/0.1-0.2							
95	8580/TP132/0.5-0.6							X
96	8580/TP133/0.1-0.2	X						
97	8580/TP133/0.5-0.6							X
98	8580/TP134/0.1-0.2	X						
99	DUP01		X					
100 ~~91~~	DUP02		X					
	DUP03* S10							
101 ~~99~~	DUP04							X
102 ~~95~~	DUP05							X
103 ~~96~~	TRIP SPIKE				X			
104 95	TRIP BLANK			X				

***Note: Please forward DUP03 to ALS for heavy metal analysis.**

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Martens & Associates Pty Ltd
Attention	Trystan Richards

Sample Login Details

Your reference	P2108580: 87-89 Tweed Coast Road, Hastings Point
Envirolab Reference	358235
Date Sample Received	02/08/2024
Date Instructions Received	02/08/2024
Date Results Expected to be Reported	09/08/2024

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	104 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	8
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

#68 - broken in transit - transferred samples into a new jar

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Acid Extractable metalsin soil	Misc Inorg - Soil	CEC	Asbestos ID - soils	On Hold
8580/TP101/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP101/0.5-0.6											✓
8580/TP101/1.1-1/2											✓
8580/TP102/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP102/0.4-0.5											✓
8580/TP102/0.8-0.9											✓
8580/TP103/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP103/0.4-0.5											✓
8580/TP103/1.0-1.1											✓
8580/TP103/1.4-1.5											✓
8580/TP104/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP104/0.4-0.5											✓
8580/TP104/1.0-1.1											✓
8580/TP105/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP105/0.5-0.6											✓
8580/TP105/1.1-1.2											✓
8580/TP106/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP106/0.4-0.5											✓
8580/TP106/0.6-0.7											✓
8580/TP106/0.9-1.0											✓
8580/TP107/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP107/0.4-0.5											✓
8580/TP107/0.7-0.8											✓
8580/TP108/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP108/0.4-0.5											✓
8580/TP108/1.1-1.2											✓
8580/TP108/1.5-1.6								✓	✓		
8580/TP108/1.9-2.0											✓
8580/TP109/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP109/0.4-0.5											✓
8580/TP109/1.0-1.1											✓
8580/TP109/1.5-1.6											✓

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Acid Extractable metalsin soil	Misc Inorg - Soil	CEC	Asbestos ID - soils	On Hold
8580/TP110/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP110/0.4-0.5											✓
8580/TP110/0.9-1.0											✓
8580/TP111/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP111/0.4-0.5											✓
8580/TP112/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP112/0.4-0.5											✓
8580/TP112/0.9-1.0											✓
8580/TP112/1.5-1.6											✓
8580/TP113/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP113/0.4-0.5											✓
8580/TP113/0.9-1.0											✓
8580/TP113/1.4-1.5											✓
8580/TP114/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP114/0.4-0.5											✓
8580/TP114/1.0-1.1											✓
8580/TP115/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP115/0.4-0.5											✓
8580/TP115/0.9-1.0											✓
8580/TP116/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP116/0.4-0.5											✓
8580/TP117/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP117/0.4-0.5											✓
8580/TP117/0.9-1.0											✓
8580/TP118/0.1-0.2											✓
8580/TP118/0.6-0.7											✓
8580/TP118/1.0-1.1											✓
8580/TP119/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP119/0.4-0.5											✓
8580/TP119/0.9-1.0											✓
8580/TP119/1.3-1.4								✓	✓		
8580/TP120/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	

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ABN 37 112 535 645
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ph 02 9910 6200 fax 02 9910 6201
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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Acid Extractable metalsin soil	Misc Inorg - Soil	CEC	Asbestos ID - soils	On Hold
8580/TP120/0.5-0.6											✓
8580/TP120/0.9-1.0											✓
8580/TP121/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP121/0.5-0.6											✓
8580/TP121/1.0-1.1											✓
8580/TP122/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP122/0.4-0.5											✓
8580/TP122/0.9-1.0											✓
8580/TP123/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP123/0.5-0.6											✓
8580/TP123/1.0-1.1											✓
8580/TP124/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP124/0.5-0.6											✓
8580/TP124/1.0-1.1											✓
8580/TP125/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP125/0.3-0.4											✓
8580/TP125/0.5-0.6											✓
8580/TP126/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP126/0.5-0.6											✓
8580/TP126/1.0/1.1								✓	✓		
8580/TP127/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP127/0.5-0.6											✓
8580/TP128/0.0-0.1	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP129/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP129/0.5-0.6											✓
8580/TP130/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
8580/TP130/0.5-0.6											✓
8580/TP131/0.1-0.2											✓
8580/TP131/0.5-0.6											✓
8580/TP132/0.1-0.2											✓
8580/TP132/0.5-0.6											✓
8580/TP133/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	

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customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Acid Extractable metalsin soil	Misc Inorg - Soil	CEC	Asbestos ID - soils	On Hold
8580/TP133/0.5-0.6											✓
8580/TP134/0.1-0.2	✓	✓	✓	✓	✓	✓	✓			✓	
DUP01							✓				
DUP02							✓				
DUP04											✓
DUP05											✓
TRIP SPIKE	✓										
TRIP BLANK	✓	✓									

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

COC 2/8/24, 1140

martens
consulting engineers since 1989

SOIL ANALYSIS CHAIN OF CUSTODY FORM

Additional Testing												
Name	P2108580: 87-89 Tweed Coast Road, Hastings Point, NSW											
Martens Contact Officer	Trystan Richards					**Contact Email**	trichards@martens.com.au					
Sampling and Shipping	**Sample Date**	01/8/2024		**Dispatch Date**	01/07/2024		**Turnaround Time**		Standard			
	Our Reference	P2108580COC05V01				**Shipping Method (X)**	**Hand**		**Post**		**Courier**	X
	On Ice (X)	X	**No Ice (X)**		**Other (X)**							
Laboratory												
Name	EnviroLab											
Sample Delivery Address	12 Ashley Street, Chatswood											
Delivery Contact	**Name**	Sample Receipt		**Phone**	9910 6200	**Fax**		**Email**	samplereceipt@envirolabservices.com.au			
Please Send Report By (X)	**Post**		**Fax**		**Email**	X	**Reporting Email Address**	trichards@martens.com.au rmehaffey@martens.com.au bmcgiffin@martens.com.au nfoster@martens.com.au martens@esdat.com.au				

	Sample ID	Combo 6	Heavy Metals	TRH	BTEXN	Hold
1	8580/MW05	X				
2	8580/MW06	X				
3	8580/MW09	X				
4	DUP01		X			
5	TRIP SPIKE				X	
6	TRIP BLANK			X		

ENVIROLAB GROUP

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 358231

Date Received: 2/8/24
Time Received: 0900
Received By: KW
Temp: Cool/Ambient
Cooling: Ice/Icepack 11°C
Security: Intact/Broken/None

Head Office
Suite 201, Level 2, 20 George Street
Hornsby NSW 2077, Australia
Ph 02 9476 9999 **Fax** 02 9476 8767

> mail@martens.com.au
> www.martens.com.au
MARTENS & ASSOCIATES P/L
ABN 85 070 240 890 ACN 070 240 890

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Martens & Associates Pty Ltd
Attention	Trystan Richards

Sample Login Details

Your reference	P2108580:87-89 Tweed Coast Rd, Hastings Point
Envirolab Reference	358231
Date Sample Received	02/08/2024
Date Instructions Received	02/08/2024
Date Results Expected to be Reported	09/08/2024

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	6 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	11
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	Organochlorine Pesticides in Water	OP Pesticides in Water	PCBs in Water	HM in water - dissolved
8580/MW05	✓	✓	✓	✓	✓	✓	✓
8580/MW06	✓	✓	✓	✓	✓	✓	✓
8580/MW09	✓	✓	✓	✓	✓	✓	✓
DUP01							✓
Trip Spike	✓						
Trip Blank	✓	✓					

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

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COC 2/8/24, 1140

Relinquished by: ELS SYD K. Chavez 5/8/24 1130 KC

Environmental Division
Sydney
Work Order Reference
ES2425438

SOIL ANALYSIS CHAIN OF CU

Telephone : +61-2-8784 8555

Additional Testing												
Name	P2108580: 87-89 Tweed Coast Road, Hastings Point, NSW											
Martens Contact Officer	Trystan Richards					**Contact Email**	trichards@martens.com.au					
Sampling and Shipping	**Sample Date**	30/7/2024		**Dispatch Date**	31/07/2024		**Turnaround Time**		Standard			
	Our Reference	P2108580COC04V01				**Shipping Method (X)**	**Hand**		**Post**		**Courier**	X
	On Ice (X)	**X**	**No Ice (X)**		**Other (X)**							

Laboratory								
Name	EnviroLab							
Sample Delivery Address	12 Ashley Street, Chatswood							
Delivery Contact	**Name**	Sample Receipt	**Phone**	9910 6200	**Fax**		**Email**	samplereceipt@envirolabservices.com.au
Please Send Report By (X)	**Post**		**Fax**		**Email**	X	**Reporting Email Address**	trichards@martens.com.au rmehaffey@martens.com.au bmcgiffin@martens.com.au nfoster@martens.com.au martens@esdat.com.au

	Sample ID	Combo 6a	Heavy Metals	TRH	BTEXN	CEC	pH	Hold
1	8580/TP101/0.1-0.2	X						
2	8580/TP101/0.5-0.6							X
3	8580/TP101/1.1-1/2							X
4	8580/TP102/0.1-0.2	X						
5	8580/TP102/0.4-0.5							X
6	8580/TP102/0.8-0.9							X
7	8580/TP103/0.1-0.2	X						
8	8580/TP103/0.4-0.5							X
9	8580/TP103/1.0-1.1							X
10	8580/TP103/1.4-1.5							X
11	8580/TP104/0.1-0.2	X						
12	8580/TP104/0.4-0.5							X
13	8580/TP104/1.0-1.1							X
14	8580/TP105/0.1-0.2	X						

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 8200
Job No: 358235
Date Received: 2/8/24
Time Received: 0900
Received By: CW
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Rec: Thw 5/8/24 1447

Head Office
Suite 201, Level 2, 20 George Street
Hornsby NSW 2077, Australia
Ph 02 9476 9999 Fax 02 9476 8767

> mail@martens.com.au
> www.martens.com.au
MARTENS & ASSOCIATES P/L
ABN 85 070 240 890 ACN 070 240 890

SOIL ANALYSIS CHAIN OF CUSTODY

Relinquished by: ELS SYD Katherine Chavez 5/8/24 1130 KC

#358235 2/8/24 O.W

Sample ID	Combo 6a	Heavy Metals	TRH	BTEXN	CEC	pH	Hold
8580/TP105/0.5-0.6 15							X
8580/TP105/1.1-1.2 16							X
8580/TP106/0.1-0.2 17	X						
8580/TP106/0.4-0.5 18							X
8580/TP106/0.6-0.7 19							X
8580/TP106/0.9-1.0 20							X
8580/TP107/0.1-0.2 21	X						
8580/TP107/0.4-0.5 22							X
8580/TP107/0.7-0.8 23							X
8580/TP108/0.1-0.2 24	X						
8580/TP108/0.4-0.5 25							X
8580/TP108/1.1-1.2 26							X
8580/TP108/1.5-1.6 27					X	X	
8580/TP108/1.9-2.0 28							X
8580/TP109/0.1-0.2 29	X						
8580/TP109/0.4-0.5 30							X
8580/TP109/1.0-1.1 31							X
8580/TP109/1.5-1.6 32							X
8580/TP110/0.1-0.2 33	X						
8580/TP110/0.4-0.5 34							X
8580/TP110/0.9-1.0 35							X
8580/TP111/0.1-0.2 36	X						
8580/TP111/0.4-0.5 37							X
8580/TP112/0.1-0.2 38	X						
8580/TP112/0.4-0.5 39							X
8580/TP112/0.9-1.0 40							X
8580/TP112/1.5-1.6 41							X
8580/TP113/0.1-0.2 42	X						
8580/TP113/0.4-0.5 43							X
8580/TP113/0.9-1.0 44							X
8580/TP113/1.4-1.5 45							X
8580/TP114/0.1-0.2 46	X						
8580/TP114/0.4-0.5 47							X
8580/TP114/1.0-1.1 48							X
8580/TP115/0.1-0.2 49	X						
8580/TP115/0.4-0.5 50							X
8580/TP115/0.9-1.0 51							X
8580/TP116/0.1-0.2 52	X						
8580/TP116/0.4-0.5 53							X
8580/TP117/0.1-0.2 54	X						
8580/TP117/0.4-0.5 55							X
8580/TP117/0.9-1.0 56							X
8580/TP118/0.1-0.2 57							X
8580/TP118/0.6-0.7 58							X
8580/TP118/1.0-1.1 59							X
8580/TP119/0.1-0.2 60	X						

Rec: 5/8/24 1447

Relinquished by: ELS SYD
Katherine Chavez
5/08/24 1130
KC

#358235
2/8/24
OW

SOIL ANALYSIS CHAIN OF CUSTODY

	Sample ID	Combo 6a	Heavy Metals	TRH	BTEXN	CEC	pH	Hold
61	8580/TP119/0.4-0.5							X
62	8580/TP119/0.9-1.0							X
63	8580/TP119/1.3-1.4					X	X	
64	8580/TP120/0.1-0.2	X						
65	8580/TP120/0.5-0.6							X
66	8580/TP120/0.9-1.0							X
67	8580/TP121/0.1-0.2	X						
68	8580/TP121/0.5-0.6							X
69	8580/TP121/1.0-1.1							X
70	8580/TP122/0.1-0.2	X						
71	8580/TP122/0.4-0.5							X
72	8580/TP122/0.9-1.0							X
73	8580/TP123/0.1-0.2	X						
74	8580/TP123/0.5-0.6							X
75	8580/TP123/1.0-1.1							X
76	8580/TP124/0.1-0.2	X						
77	8580/TP124/0.5-0.6							X
78	8580/TP124/1.0-1.1							X
79	8580/TP125/0.1-0.2	X						
80	8580/TP125/0.3-0.4							X
81	8580/TP125/0.5-0.6							X
82	8580/TP126/0.1-0.2	X						
83	8580/TP126/0.5-0.6							X
84	8580/TP126/1.0/1.1					X	X	
85	8580/TP127/0.1-0.2	X						
86	8580/TP127/0.5-0.6							X
87	8580/TP128/0.0-0.1	X						
88	8580/TP129/0.1-0.2	X						
89	8580/TP129/0.5-0.6							X
90	8580/TP130/0.1-0.2	X						
91	8580/TP130/0.5-0.6							X
92	8580/TP131/0.1-0.2							X
93	8580/TP131/0.5-0.6							X
94	8580/TP132/0.1-0.2							
95	8580/TP132/0.5-0.6							X
96	8580/TP133/0.1-0.2	X						
97	8580/TP133/0.5-0.6							X
98	8580/TP134/0.1-0.2	X						
99	DUP01		X					
100 ~~91~~	DUP02		X					
0	DUP03* S10							
101 ~~89~~	DUP04							
102 ~~95~~	DUP05							X
103 ~~96~~	TRIP SPIKE				X			X
104 95	TRIP BLANK			X				

Received
5/8/24
1447

<u>*Note:</u> Please forward DUP03 to ALS for heavy metal analysis.

Appendix J – Site Photographs

Photo 1: Typical subsurface profile.

Photo 2: Typical subsurface profile

Appendix K – EIL Calculation Sheets

Inputs
Select contaminant from list below
Cu
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
1
Enter soil pH (calcium chloride method) (values from 1 to 14)
6.5
Enter organic carbon content (%OC) (values from 0 to 50%)
1
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
7
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Cu soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	25	25
Urban residential and open public spaces	30	35
Commercial and industrial	35	45

Inputs
Select contaminant from list below
Ni
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
1
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
7
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Ni soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	25	5
Urban residential and open public spaces	25	6
Commercial and industrial	25	6

Inputs
Select contaminant from list below
Zn
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
1
Enter soil pH (calcium chloride method) (values from 1 to 14)
6.5
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
7
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Zn soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	40	90
Urban residential and open public spaces	60	140
Commercial and industrial	75	180

Appendix L – Pro UCL Calculation Sheets

1	**UCL Statistics for Uncensored Full Data Sets**											
2												
3	User Selected Options											
4	Date/Time of Computation	ProUCL 5.2 16/08/2024 9:59:22 AM										
5	From File	WorkSheet.xls										
6	Full Precision	OFF										
7	Confidence Coefficient	95%										
8	Number of Bootstrap Operations	2000										
9												
10												
11	**Copper**											
12												
13	**General Statistics**											
14	Total Number of Observations	31					Number of Distinct Observations	17				
15							Number of Missing Observations	0				
16	Minimum	1					Mean	10.26				
17	Maximum	75					Median	8				
18	SD	13.88					Std. Error of Mean	2.493				
19	Coefficient of Variation	1.353					Skewness	3.67				
20												
21	**Normal GOF Test**											
22	Shapiro Wilk Test Statistic	0.599					**Shapiro Wilk GOF Test**					
23	1% Shapiro Wilk Critical Value	0.902					Data Not Normal at 1% Significance Level					
24	Lilliefors Test Statistic	0.265					**Lilliefors GOF Test**					
25	1% Lilliefors Critical Value	0.182					Data Not Normal at 1% Significance Level					
26	**Data Not Normal at 1% Significance Level**											
27												
28	**Assuming Normal Distribution**											
29	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
30	95% Student's-t UCL	14.49					95% Adjusted-CLT UCL (Chen-1995)	16.11				
31							95% Modified-t UCL (Johnson-1978)	14.76				
32												
33	**Gamma GOF Test**											
34	A-D Test Statistic	0.66					**Anderson-Darling Gamma GOF Test**					
35	5% A-D Critical Value	0.775					Detected data appear Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic	0.126					**Kolmogorov-Smirnov Gamma GOF Test**					
37	5% K-S Critical Value	0.162					Detected data appear Gamma Distributed at 5% Significance Level					
38	**Detected data appear Gamma Distributed at 5% Significance Level**											
39												
40	**Gamma Statistics**											
41	k hat (MLE)	1.015					k star (bias corrected MLE)	0.939				
42	Theta hat (MLE)	10.1					Theta star (bias corrected MLE)	10.93				
43	nu hat (MLE)	62.96					nu star (bias corrected)	58.2				
44	MLE Mean (bias corrected)	10.26					MLE Sd (bias corrected)	10.59				
45							Approximate Chi Square Value (0.05)	41.66				
46	Adjusted Level of Significance	0.0413					Adjusted Chi Square Value	40.88				
47												
48	**Assuming Gamma Distribution**											
49	95% Approximate Gamma UCL	14.33					95% Adjusted Gamma UCL	14.6				
50												
51	**Lognormal GOF Test**											
52	Shapiro Wilk Test Statistic	0.952					**Shapiro Wilk Lognormal GOF Test**					
53	10% Shapiro Wilk Critical Value	0.94					Data appear Lognormal at 10% Significance Level					
54	Lilliefors Test Statistic	0.139					**Lilliefors Lognormal GOF Test**					

55	10% Lilliefors Critical Value					0.143	Data appear Lognormal at 10% Significance Level					
56	**Data appear Lognormal at 10% Significance Level**											
57												
58	**Lognormal Statistics**											
59	Minimum of Logged Data					0	Mean of logged Data					1.761
60	Maximum of Logged Data					4.317	SD of logged Data					1.094
61												
62	**Assuming Lognormal Distribution**											
63	95% H-UCL					17.55	90% Chebyshev (MVUE) UCL					17.38
64	95% Chebyshev (MVUE) UCL					20.6	97.5% Chebyshev (MVUE) UCL					25.07
65	99% Chebyshev (MVUE) UCL					33.84						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data appear to follow a Discernible Distribution**											
69												
70	**Nonparametric Distribution Free UCLs**											
71	95% CLT UCL					14.36	95% BCA Bootstrap UCL					16.13
72	95% Standard Bootstrap UCL					14.24	95% Bootstrap-t UCL					18.52
73	95% Hall's Bootstrap UCL					31.82	95% Percentile Bootstrap UCL					14.55
74	90% Chebyshev(Mean, Sd) UCL					17.74	95% Chebyshev(Mean, Sd) UCL					21.12
75	97.5% Chebyshev(Mean, Sd) UCL					25.83	99% Chebyshev(Mean, Sd) UCL					35.06
76												
77	**Suggested UCL to Use**											
78	95% Adjusted Gamma UCL					14.6						
79												
80	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**											
81	**Please verify the data were collected from random locations.**											
82	**If the data were collected using judgmental or other non-random methods,**											
83	**then contact a statistician to correctly calculate UCLs.**											
84												
85	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
86	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
87	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
88												